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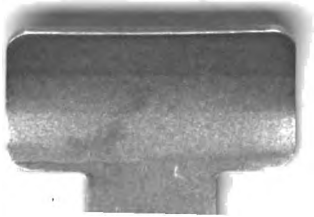

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BRITAIN AT WAR

The Royal Navy and Allies

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AFLOAT AFTER LAUNCHING BY PRINCESS ELIZABETH

The greatest battleship, H.M.S. *Vanguard*, yet built in the British Isles was named and launched by Princess Elizabeth, the occasion being the first on which she had played the chief role in an important national event.

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BRITAIN AT WAR

The Royal Navy and Allies

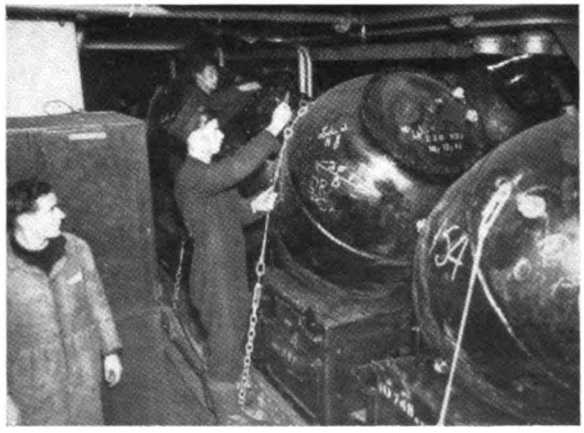
From October 1944 to September 1945

★

By COMMANDER KENNETH EDWARDS, R.N.

A COMPLETE RECORD IN TEXT AND PICTURES

With 342 Illustrations



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FOREWORD

THIS, the fifth and last volume of The Navy at War, carries the story through the consolidation of the invasion of the European Continent to Victory in Europe and the tremendous offensive of the British and American Navies against the Japanese. The latter operations are unique in history, for they covered a very large section of the world and involved more ships, aircraft, material of all sorts and men than have ever before been co-ordinated to a single objective.

In this latter section of the volume I have tried to maintain a just balance between the British and American Fleets and between the East Indies and Pacific theatres of war. I have been greatly helped by the Department of the Chief of Naval Information at the Admiralty and by Lieutenant R. L. McCombs, the United States Public Relations officer in London.

K. E.

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CHAPTER I

In the autumn of 1944, with France successfully invaded from both north and south, with the armies of the western Allies driving towards the German frontier, and with Hitler's Wehrmacht ever more hard-pressed by the Russians, there was an excusable tendency to forget that a naval war was still being waged in the eastern Mediterranean, and more particularly the Aegean. Yet in those waters the Royal Navy was carrying on a highly successful series of operations. These were by no means "sideshows." They had a very definite and important place in the unfolding strategy of the United Nations.

MANNING A 4.5-IN. GUN

The crew of a 4.5-in. gun at their action stations in a warship of the Royal Navy.

It was by that time quite clear that Germany could not hope to win the war by any orthodox means. At the same time, our sources of intelligence had reported that the Germans were working on all manner of "secret weapons," that a great new programme of building U-boats of a revolutionary type had been put in hand, and that the German High Command was planning to carry on the war, if necessary, from "redoubt" positions. In these circumstances it was essential that the maximum of pressure should be kept up against the Germans at all points. Any slackening of the pressure in the Aegean would have enabled Germany to withdraw without loss her garrisons of highly trained troops from the hundreds of islands. Once that had been done German garrisons could be called in from parts of the Balkans, and all these troops could be used in the gamble for the stalemate upon which the Nazi regime was staking everything. Time had become a vital factor, and Germany could not be allowed to move a man or a gun in the hope of gaining time. There was another point at issue. It was known that Germany was desperately short of oil and of transport of all sorts. Since the surrender high officers of the German High Command have confirmed that the immediate cause of defeat was lack of oil and the paralysis of transport. In trying to maintain the positions in the Aegean—since our pressure made it impossible for her to abandon them without losing men and material which were urgently needed elsewhere—Germany was using oil and transport. And upon these the Royal Navy was levying a heavy toll.

The Aegean was regarded as so important that a special squadron was formed early in September to deal with the problem in that sea. This squadron, or "task force," was formed of so-called "escort aircraft-carriers," cruisers and destroyers. Most of the ships had but recently taken part in the invasion of southern France, and the force was placed under the command of Rear-Admiral Thomas Troubridge, whose flag flew in the cruiser H.M.S. *Royalist*. Rear-Admiral Troubridge, however, held the command of this force for only a short time before he was required elsewhere and he was relieved by Commodore G. N. Oliver.

The formation of the "task force" for the Aegean was somewhat peculiar, and was designed to meet the special conditions of the warfare in that sea. As has been said, one of the objects was to prevent Germany from regaining from the islands—and particularly the larger islands of the Dodecanese—skilled and highly trained officers and men. It was obvious that the Germans were about to try to use transport

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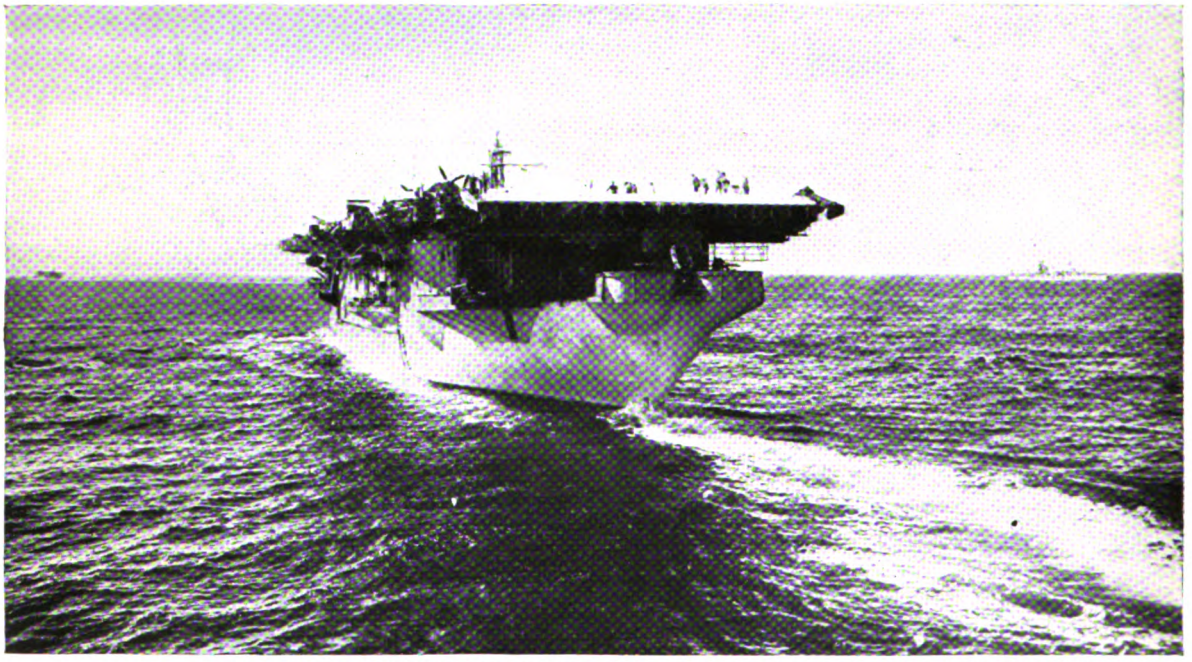
aircraft for this purpose as well as the small ferry craft and "Caiques" which still abounded in those waters. The Aegean was too far away from our shore air bases to enable anything in the nature of "standing" air patrols to be maintained without an expenditure of effort out of proportion to the results desired. Hence the inclusion of the small aircraft-carriers in the force. The Fleet Air Arm fighters from these carriers could deal with the German air transport, while the fast cruisers and destroyers could hunt down and destroy not only the ferries on the surface of the sea, but the U-boats, too. In this connection it is interesting to recall that the first recorded instance of a U-boat fitted with the "schnorkel" underwater air intake device was that of a U-boat sunk in the Aegean by this force. This special force had another refinement in that some of its ships were to use their radar installations to detect the enemy's air transport and then to direct our naval fighter patrols on to their quarries. These ships were, in fact, acting as "fighter directing stations."

The first cruise of this "task force" in the Aegean proved highly successful. The force was at sea for twelve days and operated for the most part in the southern Aegean. In those twelve days the enemy's



H.M. ESCORT-CARRIER *HUNTER* IN THE AEGEAN SEA

The escort-carrier ***Hunter*** off the island of Santorin, in the Aegean Sea, with the escort-carrier *Searcher* in the distance on the left and the cruiser *Royalist* on the right.

communications, both by sea and by air, with the southern—and most strongly held—of the islands were subjected to a rate of loss which subsequently proved to be crippling. In addition to the U-boat sunk—that fitted with the "schnorkel" device in the hope that it would be able to act as an undetected underwater transport without having to come to the surface to charge its batteries or to ventilate the craft—the enemy lost five recognised troops transporting craft and a number of other small craft operating under his direction. Naval aircraft had played their part nobly. A number of the island airfields, from which the transport aircraft used to operate, were effectively "strafed," while inland transport such as lorries and staff cars were "shot up" and destroyed. A considerable number of the German transport aircraft were destroyed, some on the ground and others in the air.

The intensity with which this offensive was carried on against the enemy is well illustrated by a chronology of the events in that area during the first days of October.

The month was only a few minutes old when the cruiser H.M.S. *Black Prince* carried out a bombardment of the German-held airfield at Maleme, in Crete, from which transport aircraft were known to operate. During the following night the bombardment of airfields was continued by the famous cruiser *Aurora*.

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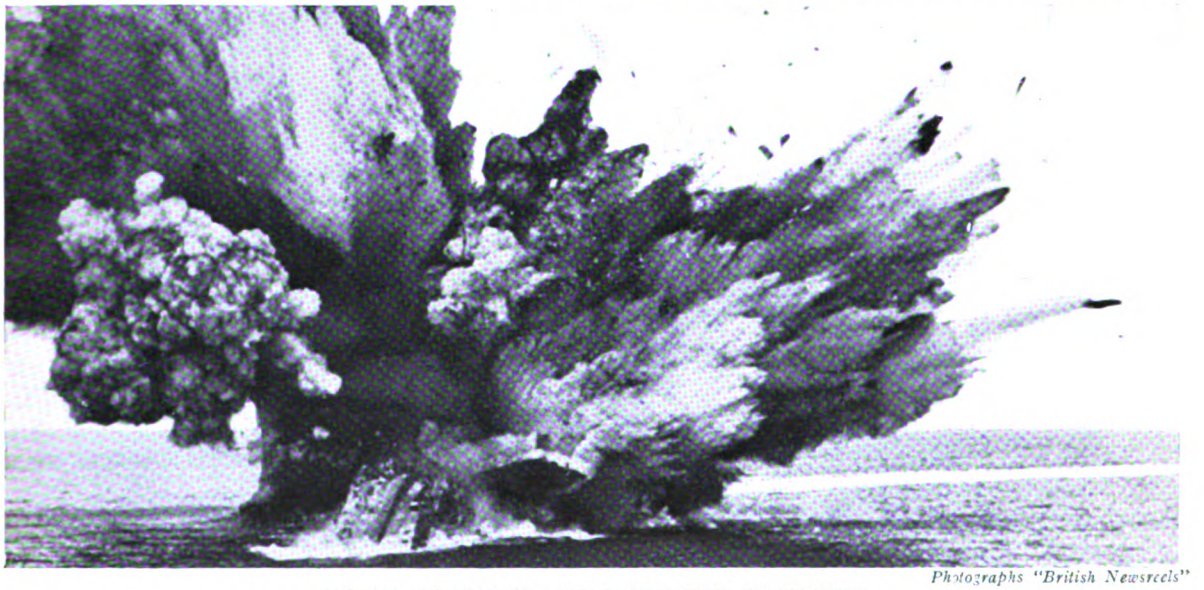

Photographs "British Newsreels"

DRAMA OF THE SEA TOLD FOR THE FIRST TIME

Photographs that tell of the terrible end of a British warship. At 4.25 in the afternoon of November 25th, 1941, the battleship H.M.S. *Barham* was attacked at close range by a U-boat in the Mediterranean, 200 miles W.N.W. of Alexandria, and struck by a concentrated salvo of torpedoes. She immediately took a heavy list to port, and when on her beam ends four minutes later, her magazine blew up. She sank with the loss of 859 officers and men. The exact cause of the final explosion will probably never be determined, but no ship of the *Barham*'s age—she was 25 years old—could have withstood such a blow; and the fact that she was the only British battleship to be sunk at sea by a U-boat in this war is a high tribute to the efficiency of our anti-submarine tactics.

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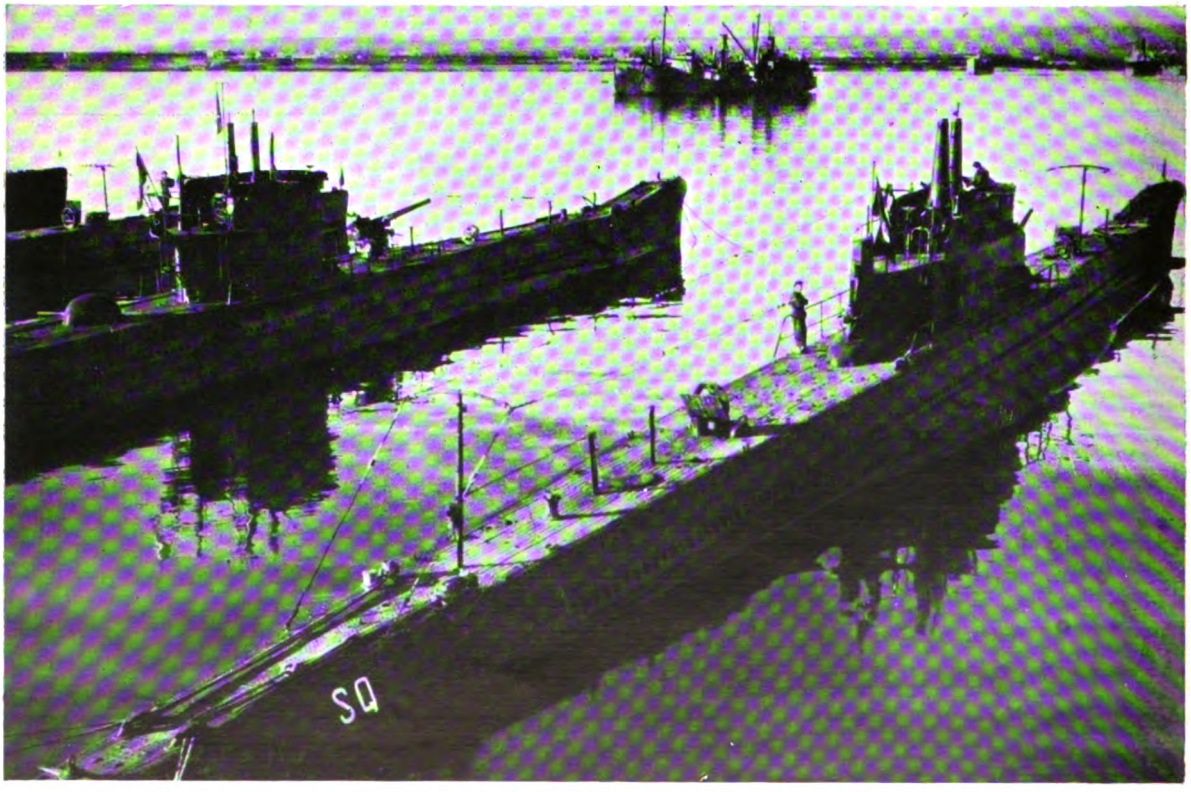
On the following day it was the turn of the naval aircraft operating from the escort-carriers. One force of aircraft made a series of attacks on the island of Levithia, in the southern Aegean, north-west of the island of Kos; while another force of naval aircraft made successful raids on Portolargo and Port Laki on the island of Leros. These attacks were most successfully followed up during the night by the two "Hunt" class destroyers H.M.S. *Calpe* and H.M.S. *Cleveland*, who intercepted a convoy of German landing craft—which were being used as ferries—north-west of the island of Rhodes. The destroyers made short work of that convoy, leaving six of the enemy vessels sinking or so badly on fire that they must have become total losses. As far as is known those six landing craft comprised the entire convoy.

Next day, October 4th, it was again the turn of the guns. The old cruiser H.M.S. *Colombo* carried out a bombardment of the port and airfield of Heraklion on the island of Crete, while the cruiser H.M.S. *Royalist*—Rear-Admiral Troubridge's flagship—bombarded enemy batteries on the island of Melos.

On the following day the island of Levithia was again, and this time finally, dealt with. It was first of all subjected to a concentrated bombardment by the cruiser H.M.S. *Aurora* and the destroyer H.M.S. *Catterick*. Following this bombardment armed parties from both ships landed under close support fire from the ships. These armed parties succeeded in capturing the eastern half of the island during their initial assault, but then the German resistance stiffened. A further bombardment was therefore called for, and this was supplied by H.M.S. *Aurora*. By dusk the German garrison had had more than enough of the treatment meted out to them by the six-inch guns of the cruiser, and they surrendered. One island had been cleared of the enemy and the officers and men of its garrison would not help Germany on any other front.

During the night of October 6th the destroyers H.M.S. *Termagent* and H.M.S. *Tuscan*, who were ranging right up to the Greek coast, met an enemy force of two destroyers close to the entrance of the Gulf of Salonika. During a brief but brisk engagement one of the enemy destroyers was sunk and the other damaged.



ITALIAN SUBMARINES IN HARBOUR

These two Italian submarines in harbour at a home base, like the rest of the active Italian navy, served with the Allies against Italy's former ally Germany. Their chief sphere of operations was the Mediterranean Sea.

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TRANSFERRING A CASUALTY AND THE SCENE AT A BASE

The upper picture shows a casualty from a minesweeper being transferred from a motor launch to the cruiser *Orion* during the landing of British troops at the Piraeus. Below is a general view of minesweepers at their base.

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And so it went on day after day and night after night, with our naval forces working tirelessly and with unabated efficiency which resulted always in the defeat of an enemy which was confused, outmanœuvred, and outfought. Very soon it was time to call upon the minesweepers to sweep a channel through which the ships of the Royal Navy could conduct the troop transports for the liberation of Greece and the establishment of yet another Allied foothold upon the mainland of a Europe which had until so recently been almost completely overrun by the enemy. On October 14th the Admiralty issued the following communiqué:—

"To-day, October 14th, British troops occupied Athens and The Piraeus, supported by ships of the Royal Navy, which included units of the Greek Navy.

"This operation for the liberation of Athens has been greatly facilitated by preliminary operations carried out in the Aegean by a mixed force of cruisers, carriers, and destroyers of the Royal Navy operating under the command of Rear-Admiral Troubridge, and later under Commodore G. N. Oliver."

MOTOR LAUNCH MINESWEEPERS

After the Italian port of Ravenna had been captured by the 8th Army it was found that enemy mines lay in such shallow water that even motor launches, of shallow draught, could not sweep the area without certain casualties. Minesweepers seen from a Landing Craft (Vehicle) minesweeper, which went into action for the first time.

On the following day, after a short delay caused by the density of the enemy minefields, the cruiser H.M.S. *Orion*, flying the flag of Rear-Admiral Mansfield, with the cruisers H.M.S. *Ajax*, H.M.S. *Aurora*, and H.M.S. *Black Prince*, and destroyers of the Royal Navy and the Royal Hellenic Navy, anchored safely off The Piraeus. All these ships carried troops for the liberation of Greece.

It was hardly to be wondered at that the Lord Commissioners of the Admiralty deemed that the force which had operated so successfully in the Aegean had earned a special signal of commendation.

The work did not end with the opening of The Piraeus and the landing of Allied troops at that port for the liberation of Athens. There still remained the mines and many German garrisons in the islands, and the latter showed no disposition for wholesale and spontaneous surrender.

The minesweeping task was in itself great. The fact that there was no large-scale surrender on the part of the Germans meant that we did not come into possession of all the German charts showing the positions of their minefields. The position of many of these we knew by experience—sometimes bitter—but we did not know their extent or density and the task of the minesweepers was thereby correspondingly increased. In the first instance the task was one of clearing channels. Then it became one of

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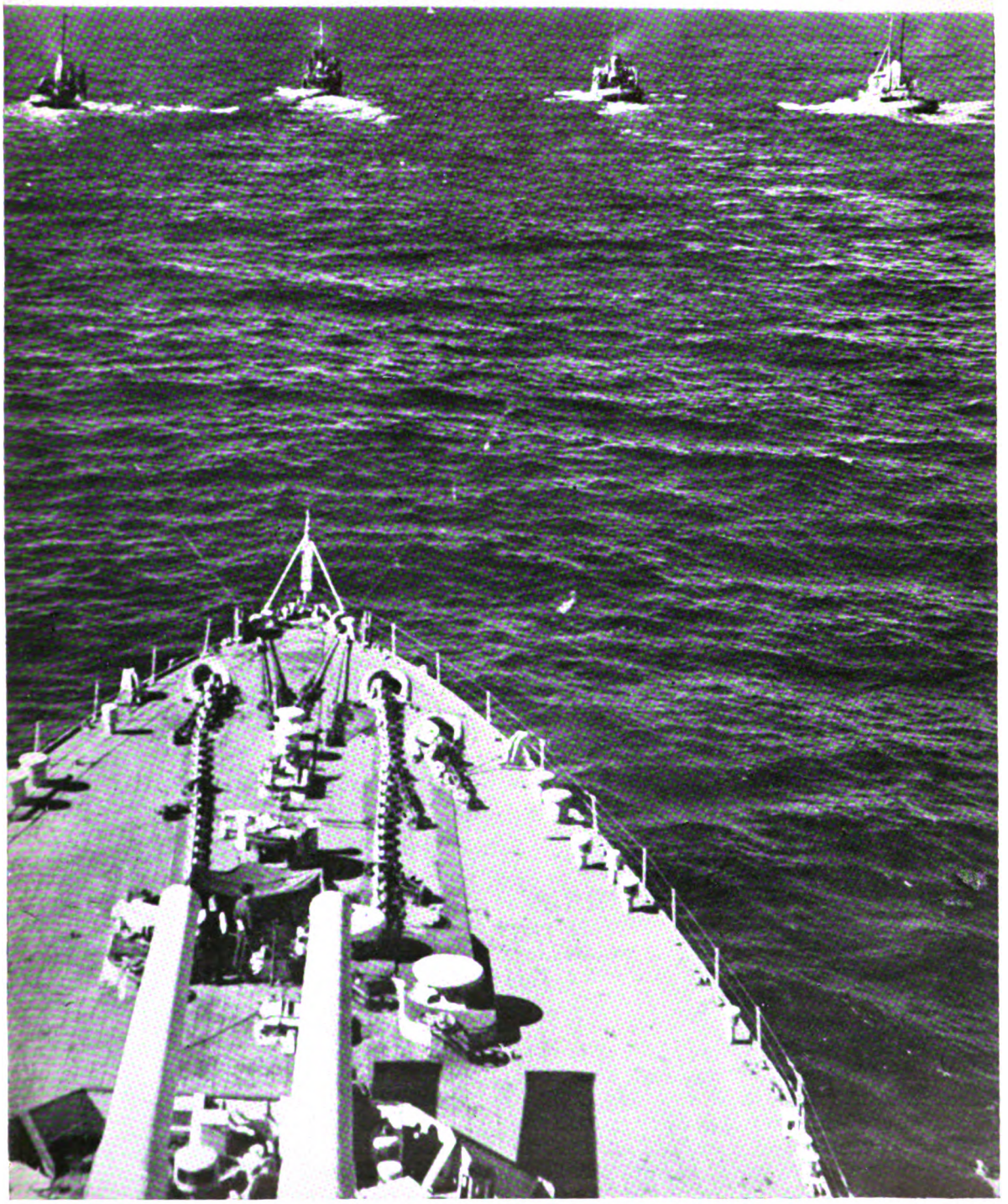

THE "OLD LADY" GETS A TOW

This photograph taken in 1943 shows H.M.S. *Warspite*, the famous battleship—known as the "Old Lady" of the Royal Navy, being towed from Malta to Gibraltar by H.M. rescue-tugs *Jaunty*, *Orana*, *Nimble* and *Restive* to undergo repairs after being damaged in the Salerno landings.

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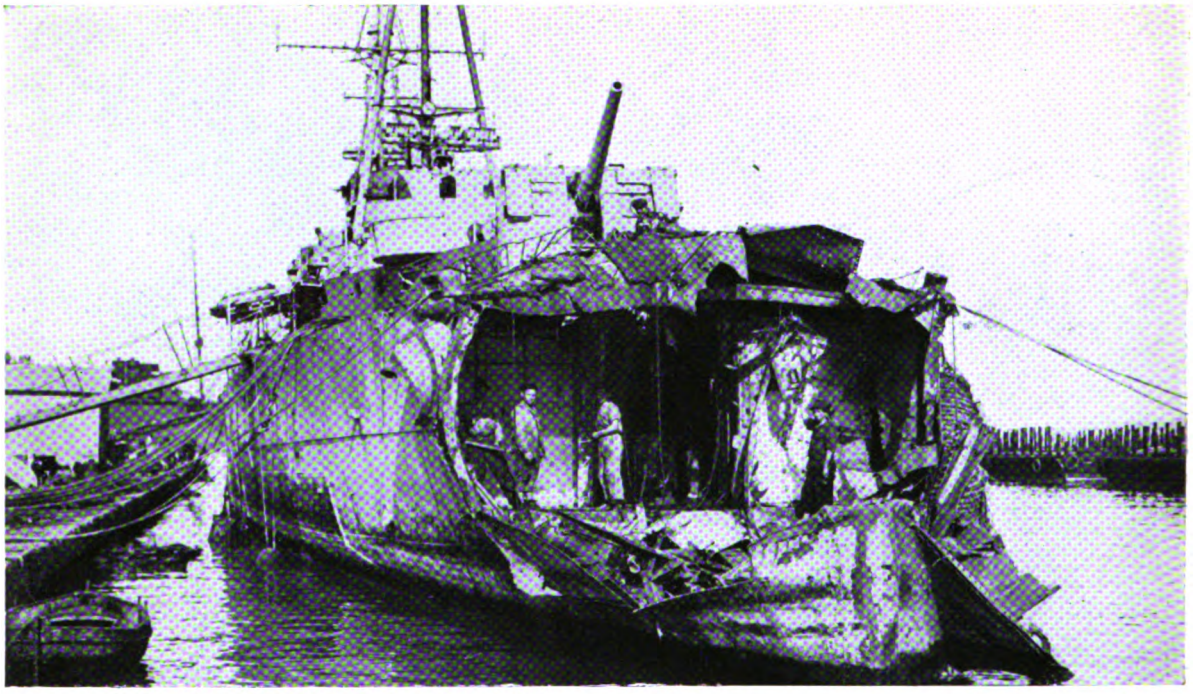

BOMBED BUT FOUGHT AGAIN

A photograph of the bomb damage sustained by the cruiser *Delhi* during the North Africa operations in 1942. She was repaired and fought again with distinction—in the operations at Salerno, Anzio and South of France.

discovering and charting the minefields and their extent. Finally the work of clearing these fields had to be undertaken.

In the early part of October the minesweepers had begun work in Aegean waters in order to allow our naval forces to operate in that area with greater freedom of movement than they could otherwise have claimed. Much of this preliminary work was done by the Fifth and the 162nd Minesweeping flotillas, who were assisted by motor launches of the 28th Flotilla and Greek vessels of the 160th Flotilla. The work of the minesweepers was, of course, complicated by the necessity for dealing with the German garrisons in the outlying islands with the minimum of delay, in order to prevent the escape of officers and other key personnel. For this reason cruisers and destroyers were required almost simultaneously in all parts of the Aegean, and minesweepers were continually being called upon at the shortest notice to tackle some new task.

The speed with which the German island garrisons were dealt with demonstrates not only energy, but closely co-ordinated organisation, for one must remember that ships have to replenish with fuel, ammunition and provisions.

On October 16th—the very day after the arrival of Rear-Admiral Mansfield's cruiser force at The Piraeus—ships of the Royal Navy arrived off Lemnos, in the northern Aegean, which had served the Allies as a base during the Dardanelles campaign of the 1914-18 war. There they landed troops who secured the surrender of the German garrison.

Next day the destroyers H.M.S. *Terpsichore* and H.M.S. *Cleveland* arrived at the island of Scarpanto, south-west of Rhodes. The destroyers arrived at dawn and landed naval parties, who were enthusiastically welcomed by the predominantly Italian garrison. The naval parties formally took over the control of the island in the name of the United Nations. On the following day the cruiser H.M.S. *Ajax* secured the surrender of the garrison on the island of Santorin, north of Crete.

These surrenders were achieved with ease, but fighting still took place in the Aegean. On October 20th, for instance, the two destroyers H.M.S. *Termagent* and H.M.S. *Tuscan*, which had previously been so successful against enemy destroyers, intercepted another enemy destroyer. She was southbound and was met close to the western entrance to the Gulf of Salonika—not far from the scene of the previous

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success of these destroyers. The German destroyer was promptly engaged and was driven ashore and reduced to a total loss.

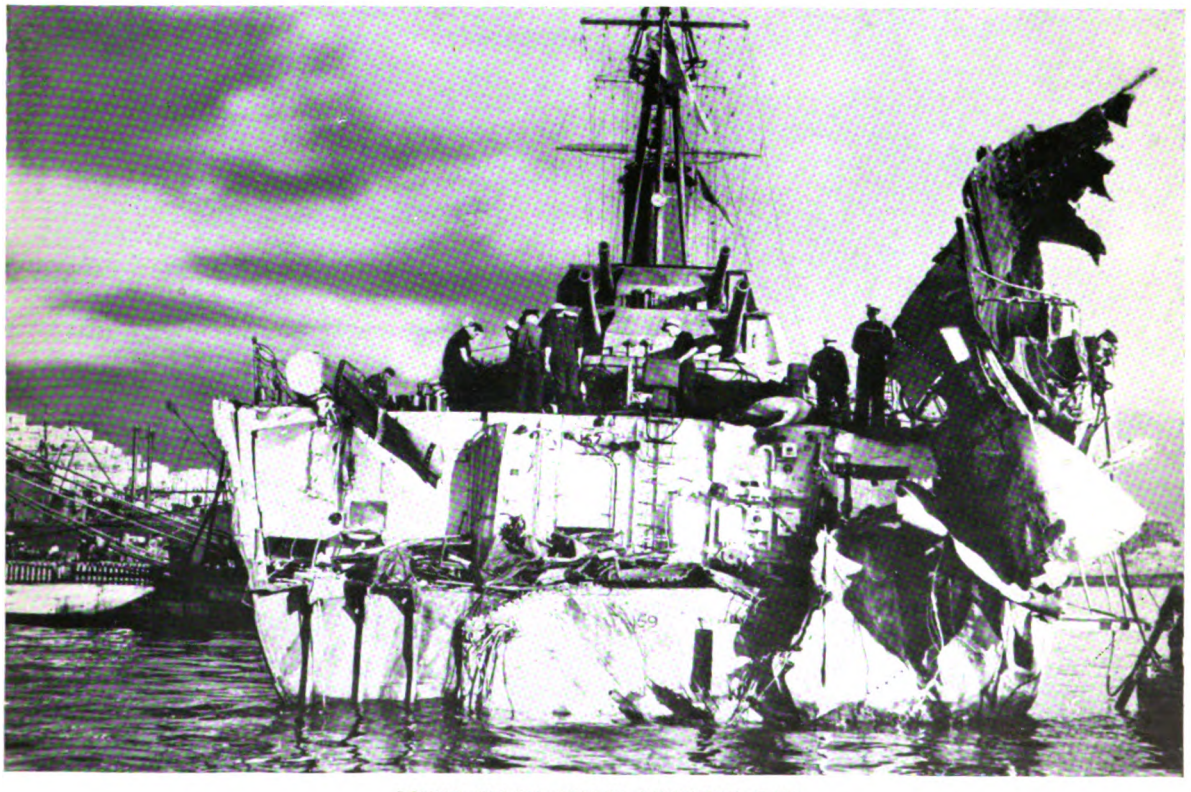
Nor did the garrisons of all the islands show disposition towards easy surrender. The island of Melos, for instance, was bombarded on October 26th by the cruiser H.M.S. *Aurora* and the destroyers H.M.S. *Emperor*, H.M.S. *Tyrian*, and H.M.S. *Tetcott*; and yet that island had to be bombarded again by H.M.S. *Aurora* some thirty-six hours later.

Meanwhile the liberation of Greece was proceeding, the speed at which troops and stores could be landed being dictated chiefly by the progress made in the clearing of the minefields. On November 9th the cruiser H.M.S. *Argonaut* and other warships arrived at Salonika. They brought with them a considerable convoy of ships carrying troops, motor transport and stores.

The larger of the island garrisons, however, had not even then been reduced. For some time we had been closing in upon the islands which were known to be most strongly held. For instance, troops had been landed from the cruiser H.M.S. *Sirius* on the little island of Piskopi, north-west of Rhodes, during the night of October 26th. Rhodes, however, was very far from falling into our hands, and it did not do so until after a heavy bombardment carried out on December 3rd by the cruiser H.M.S. *Aurora* and the destroyers H.M.S. *Musketeer*, H.M.S. *Marne*, and H.M.S. *Meteor*. Despite the speed and determination with which the problem of the island garrisons was tackled, it was several weeks before it could be said that the Aegean was clear of the enemy.

The names of a number of ships which took part in these operations have been given, but there were a great many more which have not been mentioned by name. There were, for instance, the small craft—the motor torpedo boats and the motor launches—which were peculiarly well suited to the warfare in and out of the islands.

Working from advanced bases such as Casteloriso, in the Dodecanese Islands, the little craft nightly patrolled the maze of islands between the Turkish coast and the Greek mainland. In order that they might be able to range farther from their bases than was possible in a single day, they used frequently



LIVED ON TO FIGHT ANOTHER DAY

A picture of the damaged stern of the cruiser *Argonaut* after she had been torpedoed in December, 1942, while serving in the Mediterranean. But she managed to limp home to be repaired, and saw service in Far Eastern waters.

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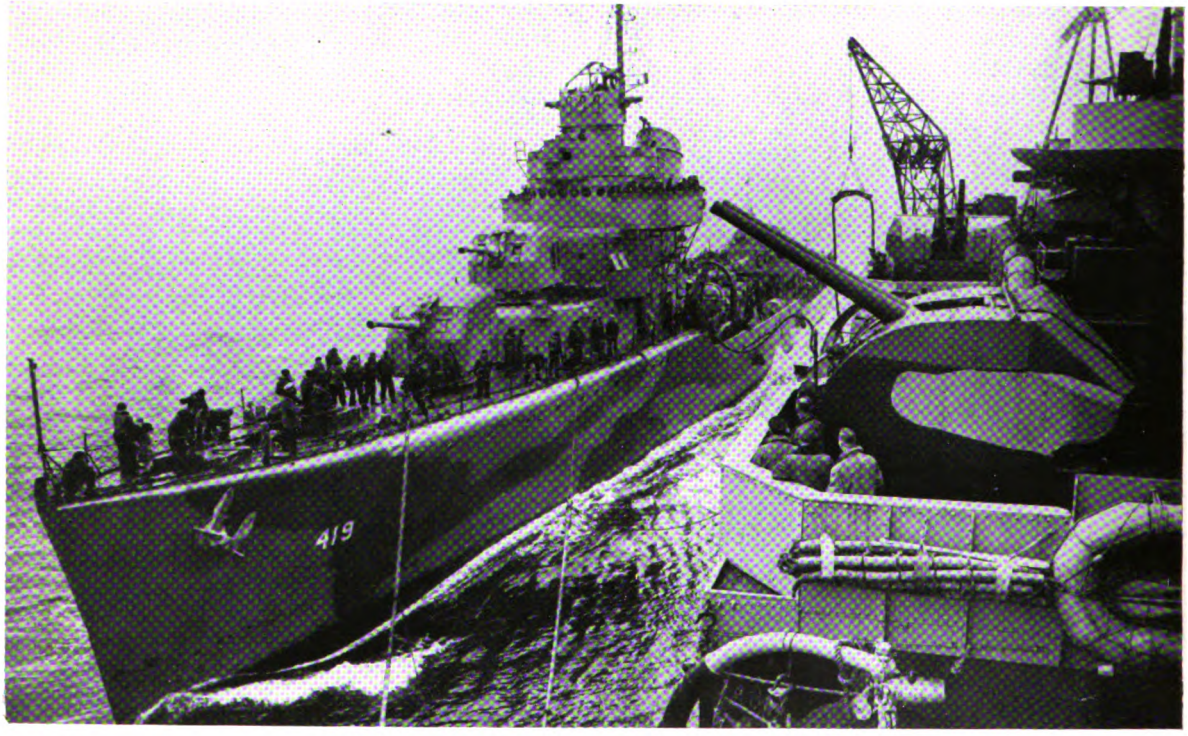
to spend several days away from their base. By day they would lie up in the islands, most of which were, to begin with, still occupied by the enemy, tucking themselves away in some secluded bay or creek and carefully camouflaging themselves. Thus they defied detection by the enemy's reconnaissance aircraft and lookouts. At dusk they used stealthily to slip out to sea to continue the hunting and harrying of the enemy.

Working in conjunction with these small war vessels were others which had not been designed or built for war. These were schooners and caiques of the types indigenous to the Aegean, which we had captured and manned or which had been eagerly surrendered to us by their crews, since to continue their lawful occasions meant being pressed by the enemy into doing his work, and thus running the gauntlet of our patrols. Thus there had come into being a strange and unorthodox force which was known as the First and Second Anglo-Hellenic Schooner Flotillas—a title which had never before appeared in the archives and orders of the Royal Navy.



ALLIED CO-OPERATION AT SEA

While on convoy duty in northern waters H.M. cruiser *Norfolk* refuels an American destroyer. The line is connected and the transference of oil proceeds.

In the Aegean there operated a special raiding force composed of Royal Naval, Royal Marine, and British Army units which were specially trained for their tasks and among whom served many Greeks. This mixed force operated with great success in conjunction with the famous Greek "Sacred Squadron" which visited practically every island in the Aegean.

The profit and loss—and there was very little loss—account of the campaign in the Aegean has not been worked out month by month, and it is therefore impossible to assess the exact result of the British offensive in those waters between the beginning of October and the final clearing of the Aegean and the liquidation of all the German island garrisons.

Certain statistics have, however, been compiled, which show the importance of the campaign in the Aegean. The campaign began some considerable time before the period with which we are here concerned, but it was sustained with ever increasing success which reached its climax in the first weeks of October, 1944.

Although certain statistics are available, it is not even now possible to apportion the "honours"

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SURRENDER OF LITTLE GERMAN SHIPS

These four photographs were taken in Ancona when various German small ships and craft which had been operating in the Adriatic were brought into the Italian port after the surrender. Top, one of the German F-lighters, or Flak ships; centre left, British M.T.B. officers hoisting the White Ensign above the swastika on board an E-boat; centre right, British naval officers inspecting a Flak ship; bottom, a German hospital tender in the harbour.

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INVASION LANDING CRAFT

One of the special craft employed in the invasion of Normandy, showing a party of Marines ready for action.

between the various ships and classes of ships and aircraft which took part, and it must not be forgotten that our submarines were among the most active vessels which operated always closer to the enemy concentrations than other ships.

It has been officially stated that the losses inflicted upon the enemy in the Aegean by various means were as follows :—

	tons
By Allied surface ships, submarines, and shipborne aircraft	44,000
By shore-based aircraft, often "directed" on to their targets by ships	33,000
By mines and navigational hazards imposed on enemy shipping by being forced off its course by our offensive; and by scuttling to avoid capture	24,000

In these statistics one thing stands out. That is that the shipping loss due to scuttling on the part of the enemy to avoid capture of ships is far less than that imposed by our offensive actions. This is an interesting point, for it shows that the Germans were concerned chiefly with the operation of such vessels as they possessed and were reluctant to discontinue their operations until the last possible moment—by which time the attrition of the Royal Navy far outweighed any loss which could be imposed by the scuttling of such vessels as had survived the Allied sea and air offensive.

"The fun is practically finished." Those were the words of the commanding officer of one of the light craft of the Royal Navy operating in the Aegean towards the end of October. The wording of that phrase demonstrates the spirit in which officers and men of the Royal Navy faced unknown hazards in unfamiliar waters—their actions being dictated solely by the time-honoured naval phrase "Seek out and destroy the enemy."

CHAPTER II

WHILE a highly successful new form of sea warfare was being prosecuted in the Aegean, another form of sea war was being carried out in the Adriatic. This, like the war in the Aegean, was unorthodox and had no foundation upon recent precedent. It was waged by individual initiative and not in accordance with the regulations—which might possibly have reached the forces concerned long after the cessation of hostilities.

The part which the Royal Navy was called upon to play in the northern part of the Adriatic in the latter part of 1944 was a combination of assisting the Yugoslav partisans and preventing the escape of German troops across the head of the Adriatic to northern Italy, and thence to other fronts.

These twin tasks devolved upon a few destroyers and a number of motor torpedo boats and motor gunboats. These ships waged a war in which initiative took the place of information. Frequently the officers concerned found that they had to act upon diplomatic directives rather than naval orders. There was, in fact, one British motor gunboat in the northern Adriatic which sported "C.D." plates—the insignia worn on motor cars registered by international diplomatists.

There was a lot of fun in the queer warfare which was carried on in the northern part of the Adriatic in the autumn of 1944, but it was warfare, and it was attended by considerable risk. Young officers were called upon to make instantaneous decisions on matters of international diplomatic importance in addition to the tactical decisions to which they had been trained.

Take the case of the small fleet of motor torpedo boats, motor gunboats, and landing craft which operated under the command of Lieutenant-Commander M. Giles in the northern Adriatic. This force was working from secret bases on the Dalmatian coast and operating, in a sense, in conjunction with the partisan troops of Marshal Tito. The advancing Russian armies had by that time virtually cut off all possibility of retreat for the German garrisons to the northward, and therefore the only possible line of escape for the Germans was across the northern part of the Adriatic to Marshal Kesselring's forces still holding on in northern Italy.

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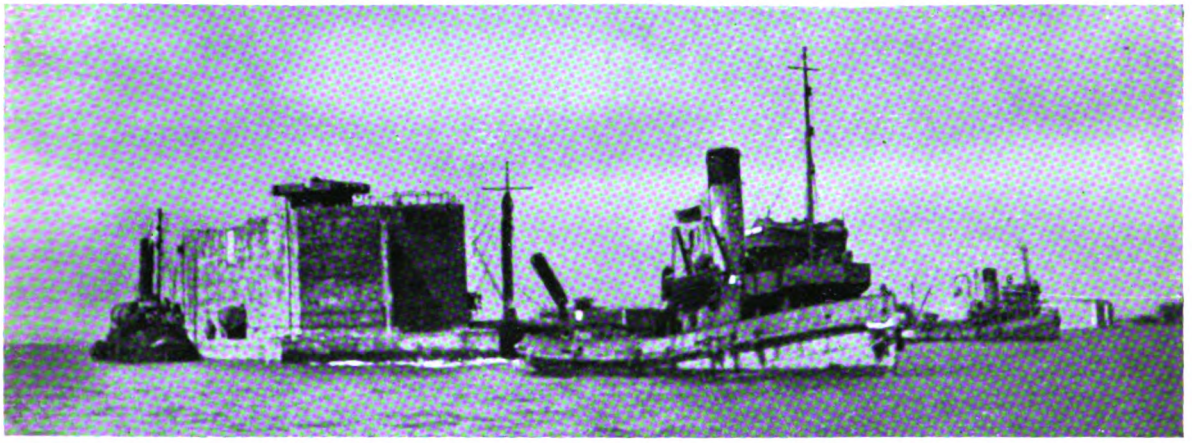

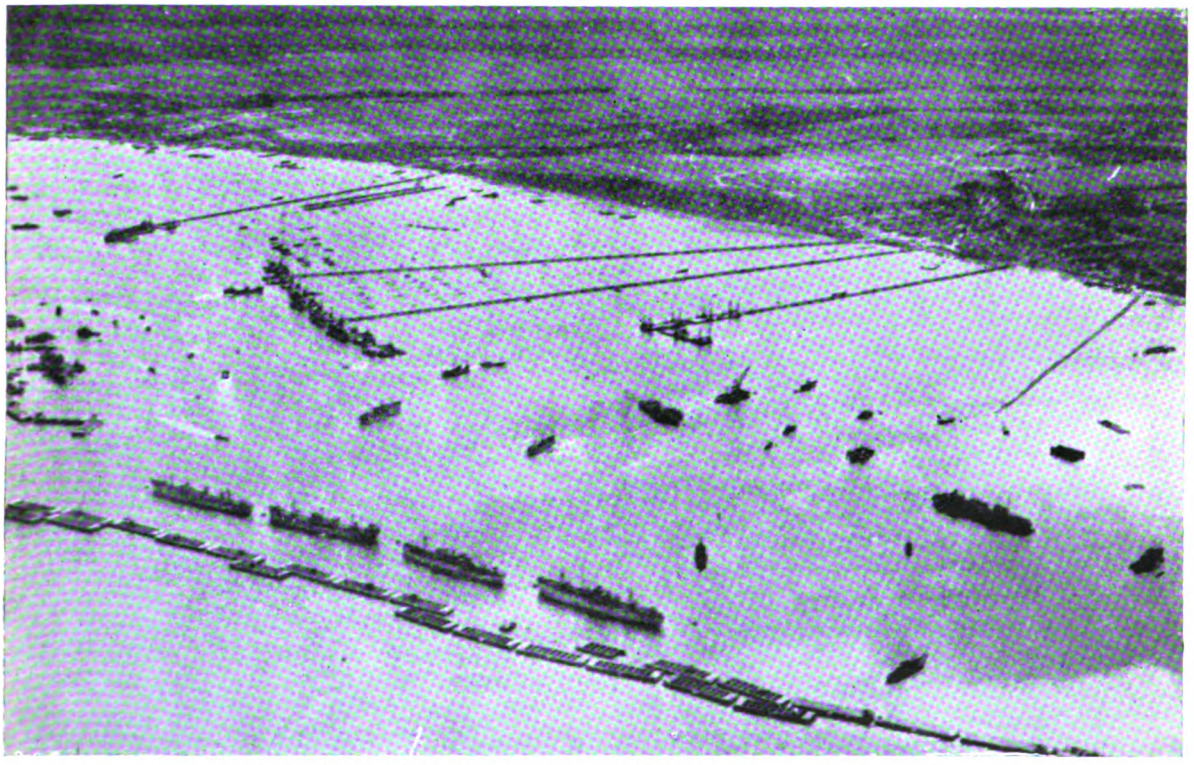

AN AMAZING ENGINEERING FEAT WHICH MADE D-DAY POSSIBLE

The pictures on this and page 21 are of "Port Winston," the name given to the marvellous prefabricated invasion harbour which was prepared in Britain and assembled by the Navy and Army at Arromanches for the invasion of Normandy. The whole of the work was completed in seven months. Top, a general view of the port from the land; middle, one of the giant caissons under tow; bottom, a view from the sea showing pierheads and pier roadways (centre), blockships (left), and four liberty ships at anchor and a caisson breakwater (foreground).

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WHEELHOUSE OF A LANDING CRAFT

The coxswain of one of the landing craft tanks in the wheelhouse during the landings on Walcheren Island.

It was this German escape route which our small craft were bent upon cutting. It was a war which resembled a game of hide and seek. The German escape ships and our light coastal forces dodged in and out among the hundreds of islands along the Dalmatian coast, some of which were controlled by the enemy, some by the Partisans, and some of them partly controlled by both. Among the islands, and when they slipped out to sea to try to seek the safety of the north, the Germans never knew when or where they would be attacked and their ships and convoys destroyed.

The efficient interception of these German convoys was largely due to an organisation of forward observers. These were army officers who were put ashore on the islands with wireless sets and naval telegraphists to report all movements of troops and shipping. The Partisans, too, had an efficient reporting system which stood us in good stead.

The efficiency of our methods in the Adriatic can be judged from the German reactions to them. So disturbed were the Germans at the continued success of our light craft that they sent three destroyers to deal with the tiny craft of the British Light Coastal Forces. These German destroyers succeeded in keeping the British small craft at bay for a short time—a very short time. Then two British destroyers arrived on the scene to even the odds—at least to even them sufficiently in the eyes of the officers and men who manned them. These two destroyers were of the small "Hunt" class—the *Wheatland* and the *Avon Vale*. The *Wheatland* was commanded by Lieutenant Hugh Askew Corbett, D.S.C., R.N., and the *Avon Vale* by Lieutenant Ivan Hall, R.N.

These two destroyers had been in the disputed waters only a few hours before they succeeded in bringing the enemy ships to action and destroying them.

The action took place among the small islands to the west of the long Pag Island, which lies fairly close offshore. In the first place the two British destroyers met two of the German destroyers, and in a brisk action both of the enemy ships were sunk. About an hour and a half later the third German destroyer put in an appearance, and she was also sunk. The Germans had lost three valuable ships in an area where they could not be replaced—and had also lost their gamble to secure the escape route for their valuable troops. The British destroyers did not suffer a single casualty, although the *Avon Vale* sustained some superficial damage. Some of the German sailors were rescued from the sea and made prisoners of war.

On one occasion the crews of some of the motor gunboats acted almost in the role of Marines. These men belonged to a force of motor gunboats commanded by Lieutenant-Commander T. J. Bligh, D.S.C., R.N.V.R., and this is how the "sea-land" operation was conducted. In the first place there was a sea battle. Lieutenant-Commander Bligh's motor gunboats successfully intercepted a group of four of the big German landing craft, all of them packed with German troops. Two of these landing craft were sunk by the motor gunboats, but unfortunately the other two ran for the safety of the coast and succeeded in reaching it. There the craft were beached and the German soldiers took to the hills. The men of the motor gunboats were not to be done out of their prey in that fashion. They dealt with the landing craft and then organised landing parties from among their small crews. These landing parties went in search of the Germans in the hills and succeeded in rounding them up and taking them prisoner. When the motor gunboats returned to their base they were moving sluggishly, for their decks were crammed with more than a hundred German prisoners.

In the little hidden bases which the Light Coastal Forces used among the islands the crews of the

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SECTIONAL VIEWS OF THE PREFABRICATED PORT

Top left, an assembled pier 480 feet in length on tow across the Channel; right, a tank passing shorewards to Arromanches along a pier; bottom left, a caisson line in position, forming the main breakwater; right, a wharf formed of two pierheads in line with lorries moving up for the unloading of supplies.

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BRITISH ASSAULT CRAFT HEADING FOR WALCHEREN ISLAND

British assault craft landed commando troops and infantry at dawn on November 1st at Flushing and Westkapelle, on the south and west coasts of Walcheren Island. In the picture some of the craft are seen heading for Flushing.

vessels were given valuable help by the villagers. This did not amount only to the passing on of information regarding German troop and shipping movements. Villagers helped to build the little temporary bases and to load and unload stores and fuel. Whenever a British sailor went ashore he was sure to be asked to share a bottle of wine with one of the villagers, and many a sailor's chocolate ration went to the village children. Small wonder that the only words of English which many of these children learnt were "Thank you."

In this queer sort of warfare between small ships among the islands off the Dalmatian coast the ancient practice of boarding an enemy ship and taking her in prize was revived by the men of our light forces. Speed in such operations was essential, and there was much rivalry between the various units about the speed with which they could take a prize by boarding. The record was set up by a unit under the command of Lieutenant-Commander T. G. Fuller, D.S.C., R.C.N.V.R., which succeeded in capturing two enemy schooners in the overall time of twelve minutes from the approach of our vessels to the departure of the two prizes at speed in tow.

Lieutenant-Commander Fuller's unit, consisting of one motor torpedo boat and one motor gunboat, were searching the coast one night when they spotted what they took to be a supply ship with two schooners in company. A few moments later, however, it was seen that what had at first been taken for a supply ship was, in fact, a wreck, which was firmly aground. Lieutenant-Commander Fuller ordered each of his vessels to seize one schooner. This they did, and—surprisingly—neither of them put up any resistance, although both were armed with machine guns and boxes of "potato" hand grenades, while one of them had a deck cargo of 20-millimetre cannons. Both schooners were captured and in tow almost before their crews knew what was happening.

There were actions between the escaping enemy and our light coastal craft almost every night, and frequently there were several actions in the space of 24 hours. They were far too numerous to list in detail—all that can be done is to try to convey something of the sort of warfare, and of the spirit with which it was waged by the young officers and men of our forces. The latter were for ever working out new tactics and vying with one another and with their own previous exploits. Nothing seemed too daring for them, and there is ample evidence that their very daring and unorthodox methods were to a great

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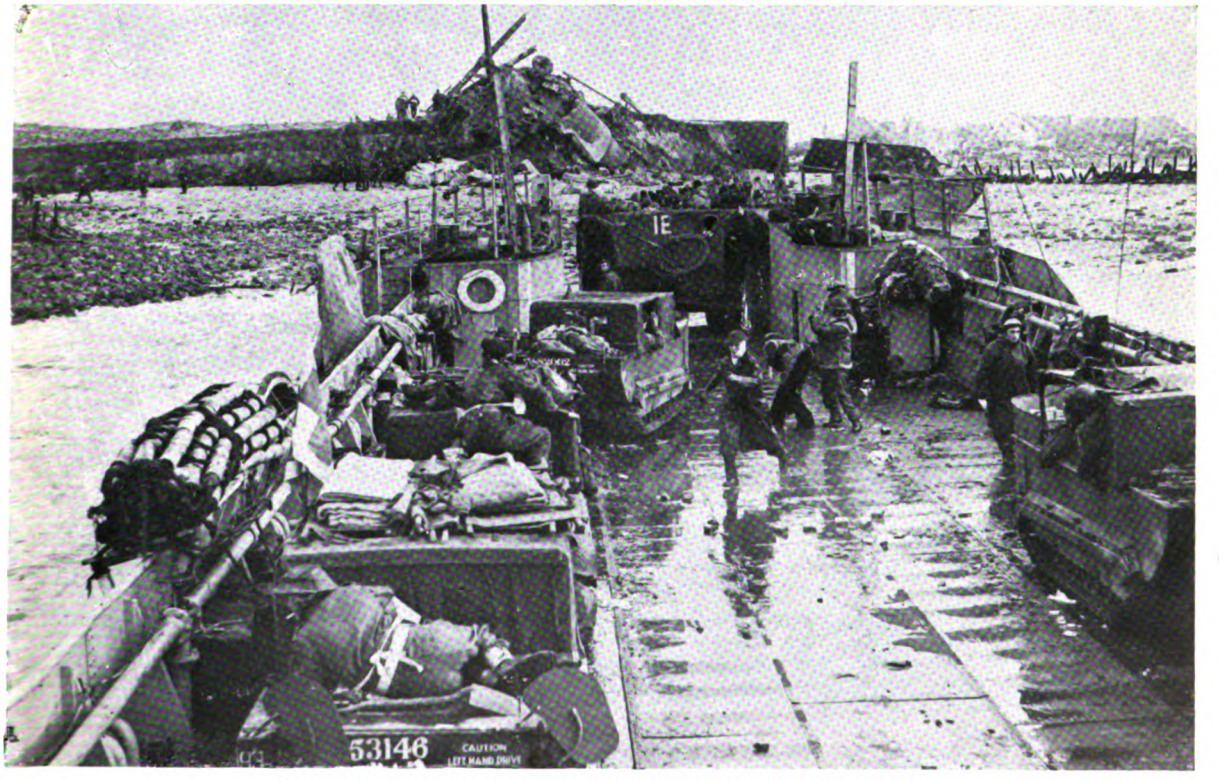
extent responsible for the complete moral ascendancy which they gained over a constantly bamboozled enemy.

There was one young commanding officer who specialised in the boarding of ships and their capture in this way—his "boarders" swarming over the rail of their victim armed to the teeth and acting in the best traditions of the Spanish Main. This young officer began by capturing a 30-ton schooner and taking four prisoners. This was not good enough for him. He raised the standard by capturing two schooners in one night and taking 11 prisoners; and this standard he raised again by capturing a 400-ton schooner and taking 16 prisoners. Then there came a night when he varied the odds by destroying a schooner, an I-boat and a small motor boat, while also capturing two schooners and a motor boat and taking 35 prisoners!

It must not be thought that our men had it all their own way or that there was never any serious resistance from the enemy. There was plenty, and a moment's lapse in vigilance or a second's delay in taking a decision and acting upon it would have led to failure and a casualty list instead of a successful report.

Witness, for instance, the following account of a brisk action in which fortune certainly did favour the brave.

The British force concerned was commanded by that same Lieutenant-Commander T. G. Fuller of the Royal Canadian Volunteer Reserve. It was about midnight and just after the moon had set. The British craft were lying close to the shore, concealed from seaward by the loom of the land, when a small vessel was located steaming about a mile to the eastward. The motor torpedo boats at once moved out to intercept, and they discovered a large armed schooner accompanied by two I-boats and escorted by five E-boats. The odds were heavily against the British force, and these odds were increased by the fact that the enemy was not surprised. In fact, the enemy opened fire first—when the British craft were within some 200 yards. One can well imagine, from the record of past performances, that a German force in such a position would have been only too pleased to sheer off and make good its escape. Not so the



DRIVING AMPHIBIOUS VEHICLES FROM A LANDING CRAFT

The scene at Westkapelle, one of the beachheads on Walcheren Island, as Royal Marine commandos drive their amphibious fighting vehicles ashore from one of the landing craft.

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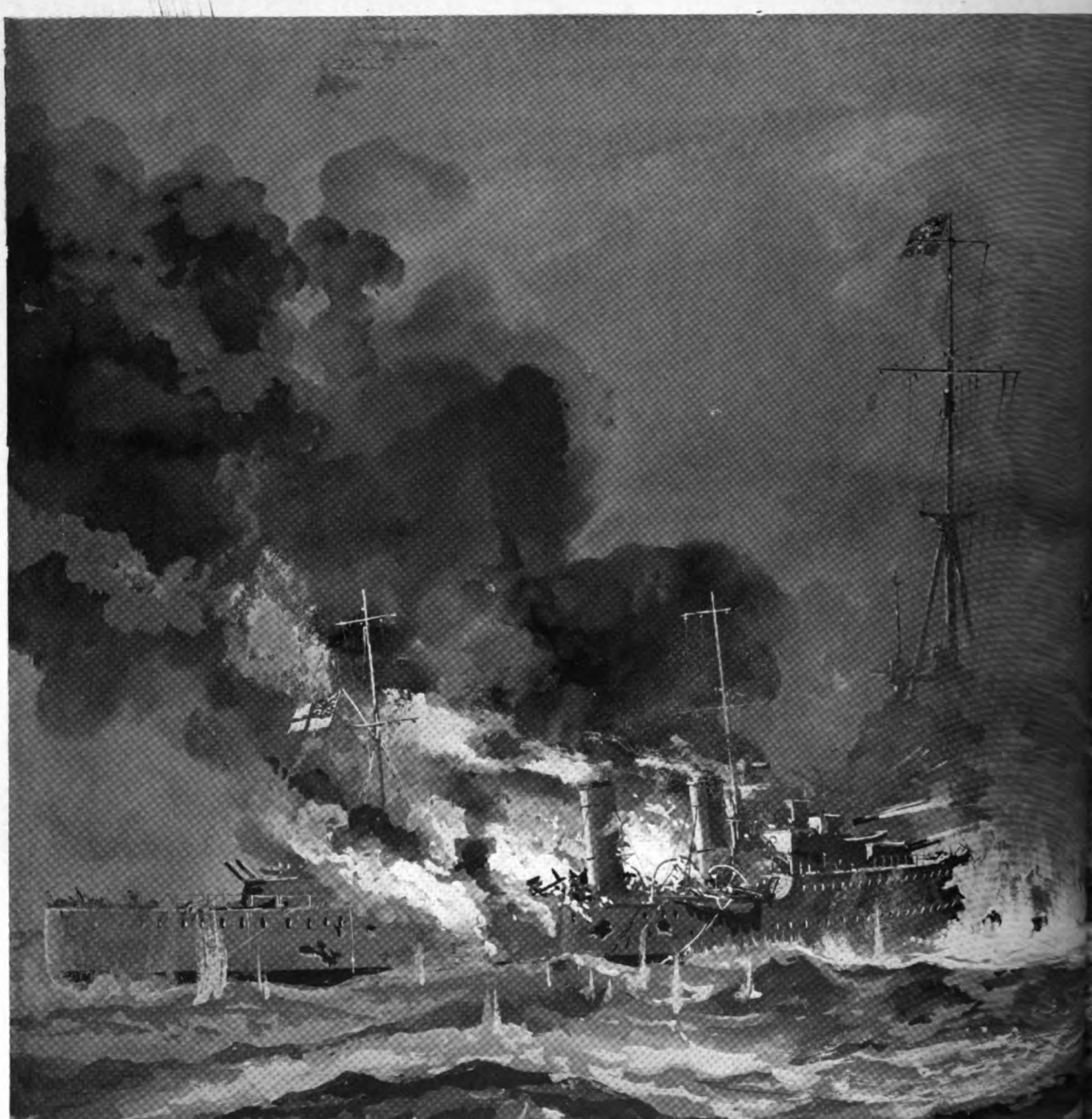

Specially drawn

AN EPIC OF THE ROYAL NAVY—H.M.S. *GLOWWORM*

A story that will ever glow in the annals of the Royal Navy is that of the 1,345-ton destroyer *Glowworm* which fought a single-handed duel at point-blank range with the 10,000-ton German cruiser *Hipper*, and then, battered and burning, turned in a last desperate gesture of defiance and rammed the enemy towering above her. With the repatriation of the *Glowworm's* one surviving officer, Lieutenant Robert Ramsey, the full story of the epic fight has been told. On April 8th, 1940, the *Glowworm* was in the North Sea, one of an escort to the battle-cruiser *Renown*, when a man was washed overboard by heavy seas. While searching for him the destroyer lost touch with her sister ships, and as the storm worsened she had to reduce speed. Her gyro-compass failed and at daybreak an unidentified destroyer opened fire. Then another enemy destroyer was sighted and a running battle against heavy

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by MONTAGUE B. BLACK, F.R.S.A.

LOWWORM RAMS A MIGHTY GERMAN CRUISER

odds began. Meanwhile the storm continued, the director control was flooded, and more men were washed overboard. A little ater the *Hipper* appeared, and the skipper of the *Glowworm*, Lieutenant-Commander Gerald Roope (posthumously awarded the V.C.), knowing his ship was doomed, resolved to inflict as much damage as possible before she was sunk. Shells from the *Hipper* nade the *Glowworm* a raging inferno, but she went on firing her guns. Then under a storm of fire the captain steered her toward he *Hipper's* starboard side. There was a grinding crunch as the destroyer's bows crumpled against the cruiser's armoured plating. The battered *Glowworm* drew away, fired once more and heeled over. Then orders were given to abandon ship—the unequal struggle vas over. Thirty-one survivors were picked up by the Germans, but the skipper and over 100 of his crew were never seen again.

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COMMANDOS TAKE COVER IN DEBRIS

These two marine commandos have taken up positions among debris during the advance on Walcheren, the landings on which were preceded by heavy air, sea and land bombardment.

British light craft. One of the motor torpedo boats at once fired star shell to illuminate the enemy, and it was then that fortune stepped in. One of the star shells from the motor torpedo boat fell into a bucket of petrol on the deck of the German schooner. She blazed up at once, and within a matter of seconds she was on fire from end to end.

The glare of this fire showed up the two I-boats and one of the E-boats. Both the I-boats were at once engaged by one of the British motor torpedo boats, and both were silenced. Another of our motor torpedo boats at once engaged the E-boat which was silhouetted by the glare of the burning schooner, and this E-boat was sunk by gunfire. It was a very pretty bit of work, in which quick thinking and quick action had made the most of the luck that was going.

The action was, however, far from over. The other E-boats made off to the eastward, and some of the British force gave chase. It should be remembered that a chase in these craft is a matter of hurtling through the darkness at 40 knots or more and expecting the stabbing flashes of tracer at any second.

Meanwhile one of our motor torpedo boats—her number was 667 and she was commanded by Lieutenant C. J. Jerram, D.S.C., R.N.V.R.—remained behind in order to board one of the I-boats with a view to capture and to pick up prisoners from the water. The E-boats saw this motor torpedo boat apparently stopped and alone in the glare of the burning schooner and, circling, returned to attack.

M.T.B. 667 was at that moment busy trying to secure about 50 prisoners of war and was also engaged in trying to put out a fire in the I-boat, alongside which she was lying. Lieutenant Jerram's vigilance, however, was equal to all three simultaneous contingencies. He saw the four E-boats coming to attack and promptly manoeuvred so that his prize lay between him and the enemy and served him as some sort of shield against their attack. The E-boats fired three torpedoes, but all of these missed.

The E-boats were not being allowed to attack without molestation. Lieutenant-Commander Fuller's other two boats, which had chased the E-boats to the eastward at the beginning of the action, were still in full cry as they came in to attack M.T.B. 667. In parenthesis it may be pointed out that the E-boats probably thought, from the blaze in the schooner, that some bigger British craft was concerned in the action, and were hoping to be able to attack her also.

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The third E-boat in the line was hit by pom-pom shells and these caused a loud explosion on board. The action was fought at such speed that it was impossible to assess the damage with accuracy, but the violence of the explosion argued either a total loss or such damage as would incapacitate the craft for the remainder of the brief but hectic campaign. The fourth in the line of four E-boats was repeatedly hit by gunfire and must have sustained considerable damage and casualties.

When the action, or rather series of actions, had been going on for nearly an hour, one of our motor torpedo boats was hit in the engine room and brought to a standstill. Within seconds she was hit again and again. Her tanks were holed by cannon shell and her engines rendered useless, while most of her guns were put out of action. Despite this damage, however, all three of our motor torpedo boats returned safely to their base after the action, while the enemy lost one schooner and two I-boats and at least two E-boats, while other E-boats were damaged. No less than 65 Germans were captured and made prisoners of war.

The end of this spirited action is best described in the words of an officer who took part. He said: "The E-boats that remained made off at high speed, and very soon we saw them, very obligingly, turn on each other and engage in a spirited gun duel between themselves while we lay disabled in the darkness and occupying a 'grandstand seat.' My crew cheered as they watched bits and pieces flying from both E-boats."

The official report of this action, after reporting the safe return to harbour of all our craft, added sorrowfully: "It is regretted that the prize could not be towed in. She contained several tons of German beer, as well as field guns."

It is of interest to recall the great frequency with which the German E-boats have fought against one another after having "had rings run round them" by our motor torpedo boats or motor gunboats. The very frequency with which this has happened in every theatre of war in which our Light Coastal Forces have been engaged demonstrates the great moral ascendancy which our craft and their crews gained over an enemy whose tactics were far more stereotyped, and whose commanding officers lacked the individual dash and instantaneous initiative shown by the commanders of our light craft.

GERMAN EXPLOSIVE MOTOR BOATS

When the allied forces made their landing at Flushing these German explosive motor boats were found. They were lying on chassis in readiness for transport overland, but the enemy had no time to remove them.

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The extent to which small groups of British light craft dominated the waters off the Dalmatian coast by sheer daring and determination is shown by what was described in an official report by a senior officer, in forwarding the report of the action to the Commander-in-Chief for transmission to the Admiralty, as: "a shrewd blow." His actual words were: "It is thought that this action may be described as the shrewdest blow that the enemy has suffered on the Dalmatian coast, and may well have speeded his evacuation of the islands."

This was an action in which three motor gunboats—all three of them commanded by young officers of the Royal Canadian Naval Volunteer Reserve—their names were Lieutenant-Commander J. D. Maitland, D.S.C., Lieutenant C. Burke, D.S.C., and Lieutenant T. Ladner intercepted an enemy convoy so close to the coast that the "overs" from the guns of the British craft caused a considerable bush fire on the shore. This bush fire, and the star shells fired during the attack, silhouetted the targets most efficiently.

The action took place in the Mljet Channel shortly before midnight, and the motor gunboats made

THE FIRST MINESWEEPER ARRIVES AT TERNEUZEN

When the Royal Navy's minesweepers engaged in clearing the Scheldt channel steamed into Terneuzen they were given a great reception by the Dutch people, some of whom are here seen welcoming the first of the fleet.

no less than six separate attacks on the enemy convoy in the face of what was described as "brisk" enemy gunfire. In the first attack a "Pil-boat"—a craft specially adapted by the Germans for carrying troops and stores—was sunk. In the second attack, delivered within a few minutes, an E-boat was repeatedly hit and left in a sinking condition, while another vessel was set on fire, and a third was silenced. In the third attack one of the schooners in the convoy was set on fire and was left blazing furiously. This schooner was obviously laden with ammunition, for she blew up with a tremendous explosion as the motor gunboats disengaged. During the fourth attack another schooner and a small vessel were set on fire. This schooner turned towards the shore, hoping to be able to escape, but just as the fire on board her died down she became silhouetted against the bush fire ashore. A fifth attack was promptly delivered and after a series of explosions this schooner also blew up, which seemed to indicate that she, too, was laden with ammunition. There remained an oil lighter which had been seen to form a unit of the convoy. The motor gunboats were in no mind to allow a craft of this type to escape, so they set out to look for her. After a short search she was located, attacked, and sunk by gunfire.

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MINESWEEPER CREW "KILLING" A FLOATING MINE

With the clearance of the Germans from Walcheren and South Beveland the Royal Navy at once set to work to sweep away the mines in the Scheldt and open the port of Antwerp. The crew of a British minesweeper are seen firing at a floating mine in the Scheldt.

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That was a notable night's work. Three motor gunboats had disposed of two schooners, one "Pil-boat," an E-boat, and an oil lighter, while at least four other enemy craft had certainly been damaged and probably received casualties.

CHAPTER III

THE speed with which the Allied invasion armies advanced to the German frontier after their break out from the Normandy beachhead and the Battle of the Falaise Gap encouraged many in the belief that the war was as good as over. It was very far from being over, as was appreciated by those in a position to assess the problems of the supply of modern armies over ever-lengthening lines of communications. The German strategy of holding the ports as long as possible and then denying their use to

MINE EXPLODING NEAR THE SHORE

An incident during the sweeping of the Scheldt: a mine explodes near the shore and throws up a great plume of dense smoke and numerous fragments of casing.

the Allies by blocking and demolition operations was perfectly sound. Thus it was that, with the Allied armies upon the German frontier, all the supplies had still to be hauled—nearly all by road—from the artificial Mulberry harbour at Arromanches and from Cherbourg. It followed that the armies had to halt and await the build-up of stores of ammunition and the rest in the forward areas before tackling the hard task of invading German territory.

The time factor was all-important, for the winter was coming on, transport was showing signs of wear, and the roads were beginning to wear out, particularly in the western area close to Cherbourg and Arromanches where they had to carry the greatest weight of traffic.

Fortunately the dash of a British armoured column had secured for the Allies the great port of Antwerp in virtually undamaged condition. The port of Antwerp, however, remained a barren gain, for it is 73 miles up the river Scheldt, and the Germans clung tenaciously to both banks of the river.

That the Germans fully appreciated the importance of holding their positions on the Scheldt and so

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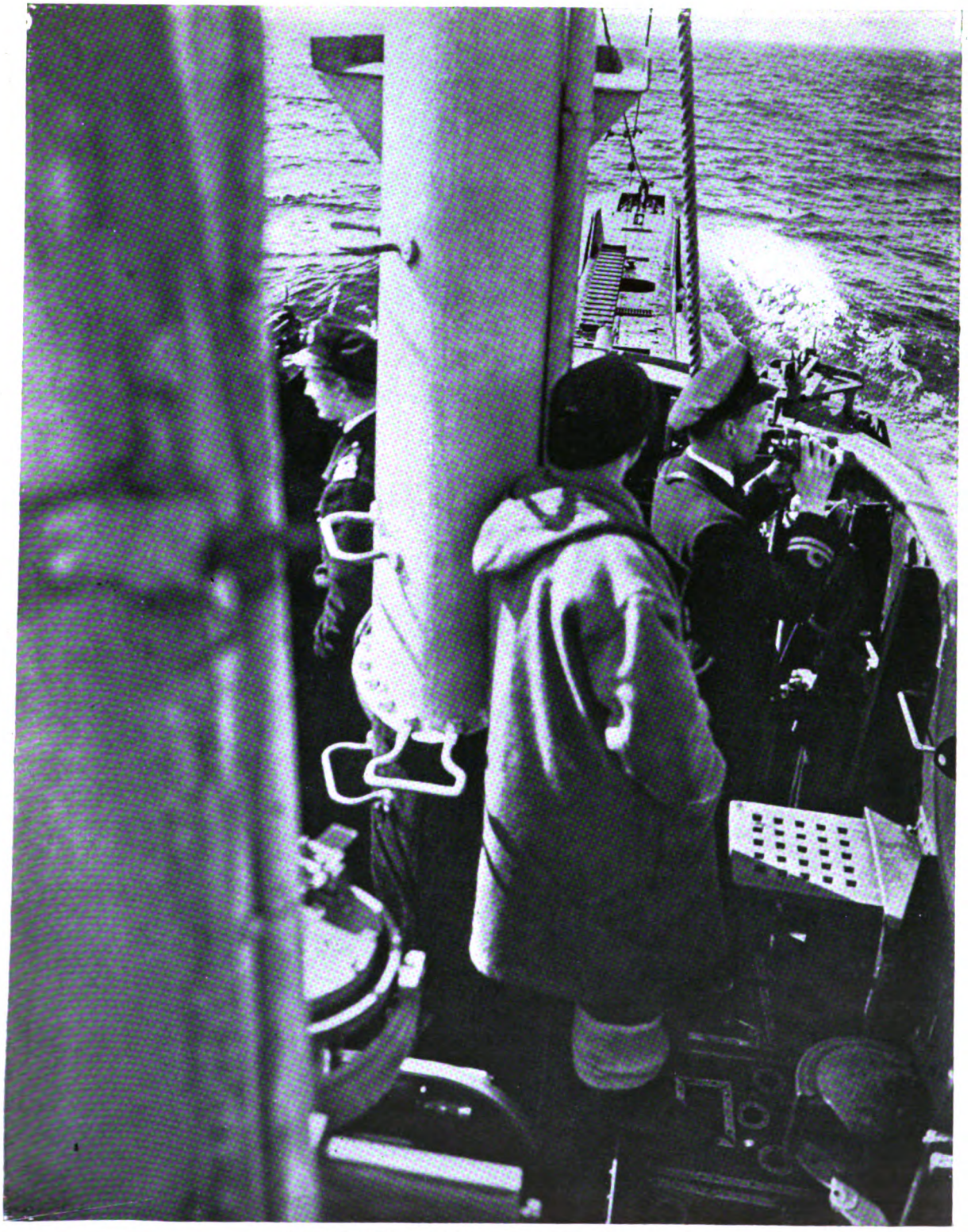

U-BOAT SUNK DURING PATROL OFF NORWAY

During a patrol in the North Sea off Norway a British submarine commanded by Lieutenant T. S. Weston, D.S.O., D.S.C., R.N., met a German U-boat on the surface and torpedoed her. The photograph shows the submarine nearing a harbour in the United Kingdom with her commanding officer, with binoculars, in the conning-tower.

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denying us the use of the port of Antwerp was proved by a captured German order which stated, among other things: "The defence of the approaches to Antwerp represents a task which is decisive for the further conduct of the war. After over-running the Scheldt fortifications the English would finally be in a position to land great masses of material in a large and completely protected harbour. With this material they might deliver a deathblow at the North German Plateau and at Berlin before the onset of the winter."

Clearing the enemy from the southern side of the Scheldt, and notably from Breskens, was a military task. So was the clearing of the great island of South Beveland, which forms the north bank of the Scheldt and which is connected to the Dutch mainland by a wide causeway.

There remained the island of Walcheren, on the north side of and dominating the estuary. Walcheren was known to be very strongly fortified, and not even the minesweepers could enter the river until it had been reduced. It was determined to do this by a three-fold assault. One was to be a military assault along the narrow causeway which connects Walcheren with South Beveland; the second was to be a combined operation across the estuary from Breskens to the Flushing area of Walcheren; the third was to be a combined operation against the western end of the island from the sea. This assault was to be delivered on the sides of the gap which had been torn in the great sea dyke by the bombs of the Royal Air Force. Nowhere else was a landing upon this dyke at all feasible.

This western assault from the sea in the Westkapelle area provided one of the most stirring epics of courage and determination in the whole of history.

The force which was to carry out this assault was collected at Ostend during October. Captain

COASTING VESSEL ENTERING ANTWERP DOCKS

Following the sweeping of mines from the Scheldt Allied supply ships soon began to make their appearance at Antwerp. The photograph shows the first of the coasting vessels to reach the docks.

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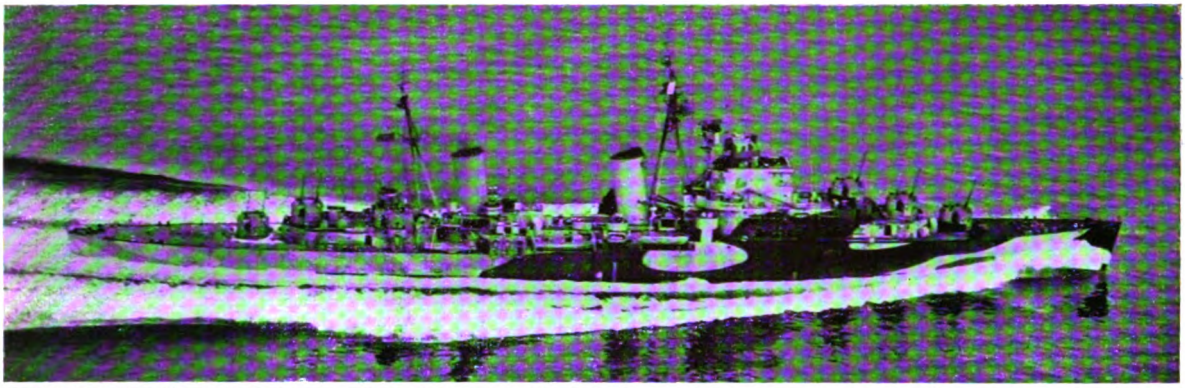

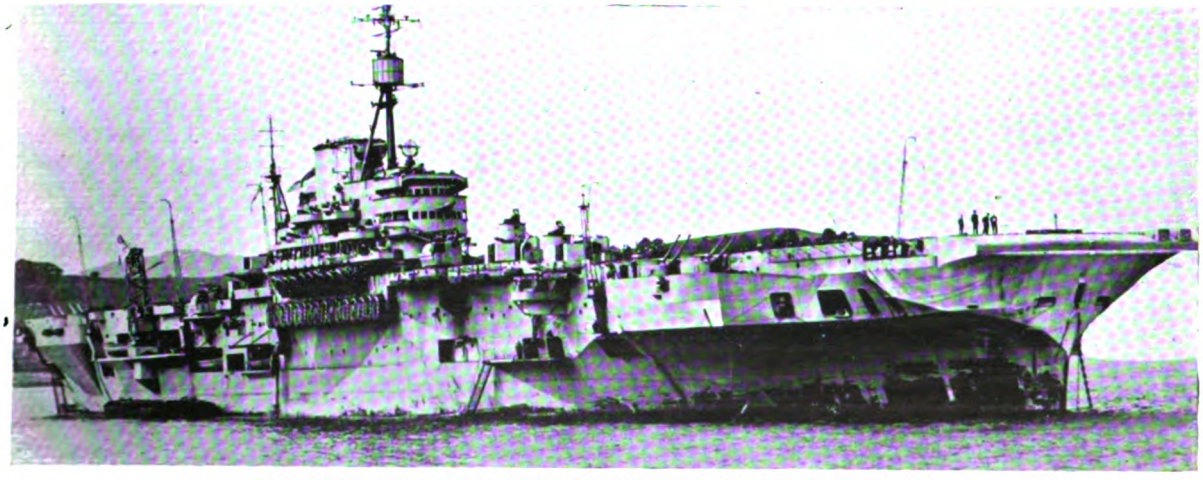

CRUISER AND AIRCRAFT-CARRIER AND SIGNALLING AT SEA

Top, an aerial view of H.M. cruiser *Argonaut*, steaming at high speed ; middle left, H.M.S. *Implacable*, aircraft-carrier, sliding down the slipway after being launched by H.M. the Queen ; right, a ship of the Eastern Fleet sending a message to a sister ship with a 20-in. signal lamp ; bottom, H.M. aircraft-carrier *Implacable*, photographed soon after being commissioned.

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ARCTIC CONDITIONS ON A DESTROYER

Members of the crew of a British destroyer breaking away ice from the frozen fo'c'sle of their ship while she was engaged in escorting a convoy carrying vital supplies of food and war equipment.

A. F. Pugsley was the naval force commander, and the Commandos to be put ashore were under the command of Brigadier B. W. Leicester, Royal Marines, from which corps most of the landing force was drawn.

It was, of course, highly desirable that all three of the assaults on the island of Walcheren should develop simultaneously, but this was a matter of difficulty because of the uncertain weather and the fact that the western assault force had to make the comparatively long passage from Ostend.

It had been decided that Walcheren should be assaulted on November 1st, and the final decision whether the western assault should go in was left to Captain Pugsley, to be taken when he reached the area and saw for himself what the weather conditions were like. Captain Pugsley found the sea conditions better than had been anticipated, and he decided that the assault on the breach in the dyke should go in as planned. That is not to say that the whole operation went as planned, for the assaulting forces were robbed of air support during the initial phases because the airfields from which the supporting aircraft were to operate—they were in Britain—were shrouded in fog. For the same reason the ships which were to carry out the initial bombardment had to work without air spotting.

The ships carrying out the bombardment were the battleship H.M.S. *Warspite* and the monitor H.M.S. *Roberts*, each of them mounting 15-inch guns. They did very well despite the lack of air spotting and succeeded in silencing, for a time at least, some of the German batteries.

At 8.48 a.m. the Support Squadron, commanded by Commander K. A. Sellar and consisting of various forms of supporting landing craft, deployed about five miles off the breach in the dyke. Within a few minutes the battle between these unarmoured craft and the strongly protected German shore batteries had been joined. For three and a half hours that battle raged at very close range. It was extremely costly, but it provided one of the best examples of one force drawing the enemy's fire while another force carried out the tasks assigned to it. After the action Captain Pugsley reported officially to his Commander-in-Chief: "This success would NOT have been achieved without the outstanding gallantry and determination displayed by all officers and men of the Support Squadron, who led the attack and engaged the extremely active enemy batteries."

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It was a case not only of giving supporting fire, but of drawing the fire of the German batteries so that they should not direct their fire on to the landing craft carrying the assault troops or upon the troops themselves as they clambered ashore at the sides of the breach in the dyke. Commander Sellar, who commanded the Support Squadron, afterwards reported that: "It was early recognised that we were up against formidable opposition and that losses and damage were to be expected in craft engaging shore batteries at close range. It is considered that this was fully justified because the Commandos got ashore well and lightly. I considered that so long as the Germans made the mistake of concentrating their fire on the Support Squadron close action was justified and losses acceptable. In fact, I decided that if there were signs of batteries selecting incoming loaded landing craft as their primary target even closer action would be ordered so as to force the Germans to fire on the Support Squadron."

The opposition faced by the Support Squadron was of no mean order. In that part of the island of Walcheren the Germans had batteries mounting four 8.7-inch guns, 24 5.9-inch guns, four 4.7-inch guns, 20 4.1-inch guns, four 3.7-inch guns and four 3-inch guns. Those were the weapons in the established batteries, but there were many other guns, ranging from machine guns up to weapons of 4-inch calibre, mounted in temporary gunpits in the dyke and the sand dunes and in the numerous strong points. It was found that the whole of the dyke system and the sand dunes were literally honeycombed with deep defences lined with concrete.

As for the range at which the young officers and men of the Support Squadron fought this action against odds—perhaps the best illustration is the terse report of Lieutenant Flamank, R.N.V.R., which stated: "I regret to report the loss of my ship off Westkapelle shortly after H-hour on November 1st, 1944, after being in action with a German pill-box at a range of 40 or 50 yards."

Lieutenant G. A. Flamank's vessel was one of two craft which went right in and actually beached themselves on either side of the breach in the dyke in order to give cover and support to the Commandos being landed in the breach. The other of these craft—they were "Landing Craft, Gun" and their numbers were 101 and 102—was commanded by Lieutenant D. R. V. Flory, R.N.V.R.

These two craft had to run into the edges of the breach in the dyke under very heavy fire from the

CONVOY DESTROYER DROPS A DEPTH-CHARGE

Another destroyer on winter convoy duty drops a depth-charge which throws up a huge mushroom of water. In spite of their heavy winter clothing the crew find the arctic conditions anything but desirable.

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German batteries. Nevertheless, they were beached in the right positions and were able to give covering and supporting fire to the Commandos at point blank range. They were, of course, engaged by German guns of up to 5.9-inch calibre at a range of a few yards. Lieutenant Flory's craft was soon set on fire, but the fire was got under control and the vessel was kept in action for an appreciable time—the time that was vital during the actual landing of the Commandos of the first wave of the assault. Then the fire broke out again and this time got such a hold that it could not be dealt with, and the craft became a total loss, broached to on the beach and burning fiercely from end to end. Her consort, Lieutenant Flamank's vessel, remained in action at point blank range until after 10 a.m. Then, her task done, her commanding officer tried to withdraw, but the craft was so badly damaged that she sank as soon as she left the beach.

This was the occasion of one of the many very brave actions which took place that day. Lieutenant Flamank's craft had rolled over and sunk when Able-seaman Green and Able-seaman Garthwaite dived overboard from another craft and supported the wounded survivors in the water. It was due to these two men that six lives, including that of Lieutenant Flamank, were saved.

Another action of great courage which took place in the Support Squadron on that day was that of the motor mechanic of a landing craft which had been badly hit and set on fire in the engine room and fuel tank compartment. Another craft came alongside and a hose was rigged from the undamaged vessel in order to fight the fire. The motor mechanic actually fought and controlled the fire while sitting in the shell-hole in the ship's side, apparently oblivious of the fact that some 2,600 gallons of petrol remained in the burning compartment—although he knew very well that it was there.

One of the very gallant gentlemen who sacrificed their lives in the Support Squadron on that day was Lieutenant S. N. Orum, R.N.V.R., who had so signally distinguished himself off the Normandy beaches when he boarded one of the German explosive motor boats and so obtained most valuable information of their structure, arrangement and capabilities. Lieutenant Orum was leading a group of three support craft whose duty it was to engage the full attention of the German batteries immediately

H.M. ESCORT-CARRIER *FENCER* ON CONVOY DUTY

Russian officers watching flying operations from the British escort-carrier *Fencer* in northern waters. The ***Fencer*** has taken part in successful attacks against enemy shipping off Norway and on the fringe of the Arctic Circle.

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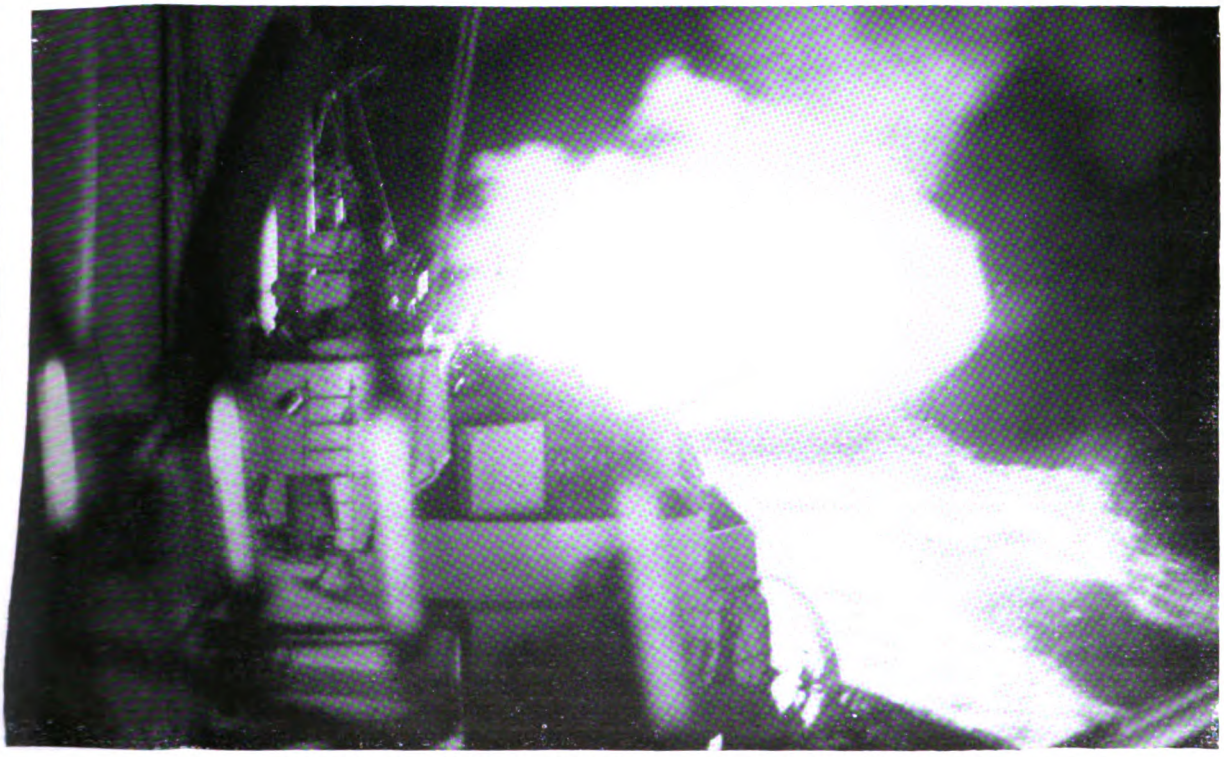

CONVOYS IN NORTHERN WATERS: TRANQUILLITY AND ACTION

Contrasting pictures of convoy duties in northern waters. Top, a tranquil scene as the ships of an allied convoy to Russia steam ahead at sundown, with H.M. escort-carrier *Fencer* (in the foreground) keeping watch and ward over them; below, the 8-in. guns of H.M. cruiser *Norfolk* lighting up the darkness as she attacked an enemy convoy off the coast of Norway.

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H.M. BATTLESHIP *HOWE*

H.M.S. *Howe*, the 45,000-ton battleship, firing her starboard 5·25-in. guns in northern waters.

to the south of the breach in the dyke where the landing was taking place. In the words of Commander Sellar, Lieutenant Orum led his craft in "To point blank and what proved suicidal range of the German batteries and strongpoints." All three of the craft were set on fire and then sunk, but they certainly achieved their object of engaging the enemy's attention at the critical period, and their crews thus saved the lives of a great many of the Royal Marine Commandos who were effecting the landing and contributed in no small measure to the success of the operation—and thus to the opening of the port of Antwerp and victory over Germany.

It would be difficult to equal the exploits of the craft commanded by Lieutenant A. Cheney, R.N.V.R., the duty of which was to keep the German batteries to the north of the breach in the dyke fully occupied during the landing of the Commandos. Lieutenant Cheney's craft opened fire at a range of just over six and a half miles on a German battery of four 5.9-inch guns, but continued to close the range rapidly. The vessel actually reached a position between 500 and 700 yards off this heavy-gun battery before she was hit. Then she was hit in the engine room and began to flood so quickly that the hatches had to be shut and battened down in the hope of trapping a sufficient air lock to keep the craft afloat. She did remain afloat, but she was helpless with her engines out of action and the tide swung her round so that she lay stopped with her stern towards the dyke and only 2,000 yards from it. In this position her guns would not bear on the enemy, for whom she became a sitting short-range target which could not hit back. It was a desperate situation but Lieutenant Cheney was far from accepting it as impossible. He hailed another craft which was passing and got her to tow the stern of his damaged vessel round so that her guns could again be brought to bear on the enemy. Then the action was resumed while the other craft went about its own occasions. Some time later the damaged craft again swung round so that her guns could not be brought to bear on the enemy. Again Lieutenant Cheney secured the services of another vessel to tow him clear, but this time both craft struck mines and sank.

It was inevitable, in close fighting of this sort against heavy enemy batteries concealed and protected in concrete emplacements ashore, that heavy casualties should be suffered by the vessels of the Support Squadron. In those epic two hours while the Support Squadron engaged practically the whole attention of the enemy the casualties in the Squadron amounted to 172 officers and men killed or missing and 125 officers and men wounded. Eight craft were sunk and eight more put out of action, while a further

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four had suffered damage which affected their fighting efficiency. Yet the Support Squadron had achieved most magnificently the task which had been imposed upon it. So well had the vessels drawn the enemy's fire that the Commandos in the landing craft suffered casualties amounting only to five killed and 28 wounded.

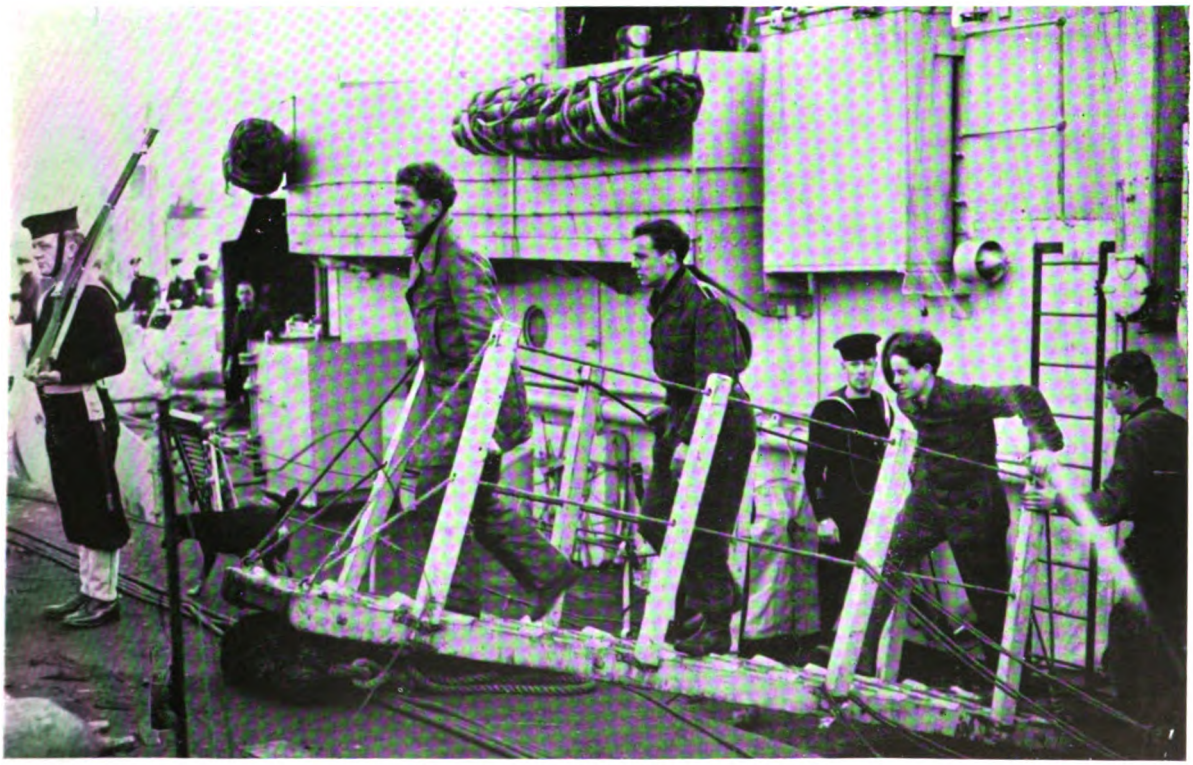
As the battered remnants of the Support Squadron withdrew, the Commandos, most of whom were Royal Marines, were working fast and hard to achieve and consolidate victory on the western part of the island.

It is worthy of note that here was a classic case of the Royal Marines being used in their traditional role as "sea-soldiers." They were landed from the sea and the object of the whole operation was to secure access to a great harbour. Major W. R. Sendall of the Royal Marines, who took part in the operation, said afterwards: "The landing of the Royal Marine Commandos on Walcheren broke the last bolt with which the Germans could shut fast the door to Antwerp." There was no exaggeration in that statement.

The landing in the Westkapelle area was carried out by three Royal Marine Commandos and two troops of an Allied Commando, supported by Assault Engineers manning tracked amphibians, two field companies of Royal Engineers, a detachment of Pioneers, and a squadron of tanks.

For this assault there was no beach in the accepted sense of the word. The landing craft had to nose their way in and "touch down" on the torn edges of the breach made in the great dyke by our bombers. While they were doing so they were, of course, close under the muzzles of a large number of German guns. That was why the great and unselfish action of the vessels of the Support Squadron was of such great importance. As it was, the German fire directed against the gap in the dyke was both hot and accurate. There were in the Royal Marine Commandos many men who had taken part in the Commando landings during the invasion of Normandy, and they described the German fire at Walcheren as worse than anything they had previously experienced. In fact, they said that this little D-day was far more terrifying than the big D-day.

The first wave of the assault consisted of one Royal Marine Commando, which was successfully landed



U-BOAT PRISONERS GOING ASHORE

These members of a sunken enemy U-boat being brought ashore at a British port appear to be glad they are prisoners-of-war.

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Specially drawn

LIGHT COASTAL FORCES OF THE ROY

The enemy found it increasingly difficult to evade the vigilance of the Royal Navy in the coastal areas of the Netherlands, an consequently there were frequent actions in which convoys trying to voyage from one port to another were concerned with Britis light coastal forces. One such encounter occurred on November 1st, 1944, when a German convoy proceeding under a strong escort trawlers, gun coasters and R-boats was sighted and attacked by a force of light naval vessels off the Hook of Holland. The Britis

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by MONTAGUE B. BLACK, F.R.S.A.

NAVY ROUT GERMAN CONVOY

ships, Canadian-manned motor torpedo boats under the command of Lieut.-Commander C. A. Law, D.S.C., R.C.N.V.R., penetrated the escort screen and scored a hit with a torpedo on a medium-sized supply ship which was left enveloped in smoke. During the next few hours the convoy was subjected to a series of attacks, and the enemy escorts and patrol were repeatedly engaged with gunfire and sustained damage. Our artist, Montague B. Black, F.R.S.A., an accredited war correspondent, gives an impression of the action

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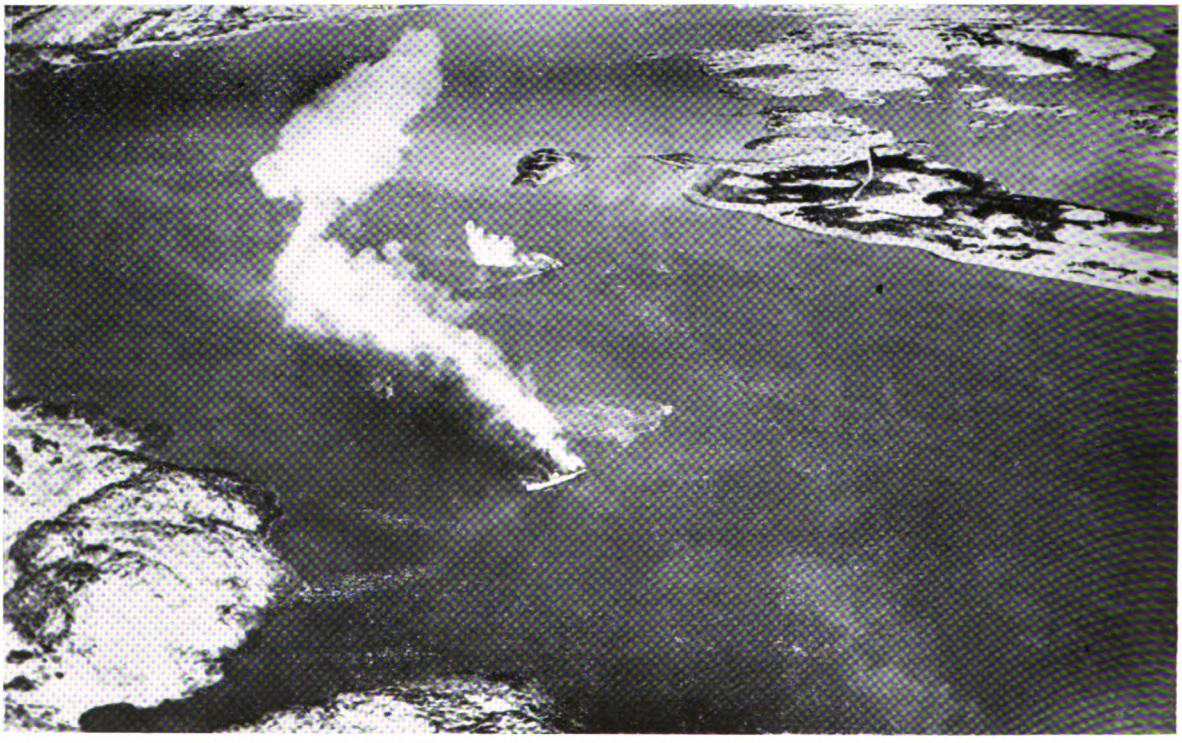
on the northern edge of the breach in the dyke. Another Royal Marine Commando was landed almost simultaneously on the southern edge of the breach. The force to the north of the gap in the dyke was reinforced by troops of the Allied Commando, while that to the south of the gap was reinforced by the third Royal Marine Commando.

To the north of the gap the Marines were at once confronted by a German pillbox. This they successfully reduced and swept forward through the devastated and flooded village of Westkapelle. Then they came up against stiff resistance from a battery of four 5.9-inch guns. After some brisk fighting they overcame this battery, being helped in the task by a few tanks which had got ashore and come up in support.

Once that battery had been captured the Marines swept along the dyke at speed, and the Germans came tumbling out of their burrows to surrender. In a few hours they had reached the village of Domburg, where they met strong resistance from another big battery—this one being of four 8.7-inch guns. Backed



FLEET AIR ARM STRIKE ON A CONVOY

This photograph was taken from one of the attacking aircraft when Fleet Air Arm Barracudas struck at a German convoy off Norway. In the centre a troopship is seen on fire and running aground; on the left is an armed trawler hiding under the troopship's smoke; and in the background a large supply vessel is being beached.

up by their reinforcements, the Commando men gradually fought their way into this battery and killed or captured its entire garrison. Then they halted to consolidate.

South of the breach in the dyke the Marines progressed rapidly to start with. They cleared the radar station and a small battery and swept on to a battery of three 5.9-inch guns. This they tried to carry by assault, but they suffered heavy casualties, including the commander of the leading troop, who was killed. Another troop at once took over the attack, but came under intense mortar fire which caused serious casualties.

This was some of the toughest fighting ever experienced, even by those specialists in tough fighting, the Royal Marine Commandos. It must be remembered that most of the inside of the island was flooded, so that movement was restricted to the dyke between the sea and the flooded area. It was like fighting along the rim of a saucer. Moreover, it was grim slogging through soft, deep sand, which clogged rifles and automatic weapons and filled eyes, mouths and noses. And this had to be done in face of a determined enemy fighting in prepared positions and using heavy guns as well as light weapons.

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U-BOATS AND TORPEDO BOMBERS BEATEN OFF

A British convoy bound for Russia was persistently attacked by enemy U-boats and torpedo planes in exceptionally severe weather. Although the attacks were continued on the way back to Britain only six per cent of the ships were lost. Top, a merchant ship of the convoy battling against the heavy weather; middle left, Rear-Admiral R. H. McGrigor, Commander of the escort vessels, on the bridge of the *Campania*, with his senior officer; right, a view of some of the convoy ships from the *Bellona*; bottom, the escort-carrier *Nairana*, her bows hidden by heavy seas.

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LAST DIVE OF A JU88 TORPEDO BOMBER

One of the Ju88 torpedo bombers which attacked the convoy shot down into the sea; flak tracer still follows the path of the destroyed raider. The picture was taken from the escort-carrier *Campania*.

Fire support for the Royal Marine Commandos attacking the 5.9-inch gun battery south of the breach in the dyke was organised from guns in the neighbourhood of Breskens, firing across the Scheldt estuary. Moreover, the weather in England had cleared by this time and some air support could be given. So the attack was resumed, this time under cover of smoke. This time the Marines succeeded in fighting their way into the control room of the battery and subsequently in clearing the whole battery of the enemy before dawn.

Their next job was the village of Zouteland, which they captured after fighting two small battles for the sand dunes which dominated the village.

South-east of Zouteland the Royal Marine Commandos found themselves held up by a strong system of defences consisting of a deep anti-tank ditch and huge concrete "dragon's teeth." This system was dominated by gun positions and was obviously a very tough nut—particularly since by this time the weather had again closed down, so that no air support could be expected.

Artillery support from the southern side of the estuary was, however, organised, and with this support the two leading troops of the Commando succeeded in crossing the ditch. Having crossed it, however, they came under heavy mortar fire and suffered casualties.

Meanwhile, three other troops of this same Commando were attacking along the dyke, aiming their thrust at the next big battery of four 5.9-inch guns. The leading elements of these troops reached the battery, but in so doing they over-ran small pockets of German resistance, which afterwards "came to life" behind them, so that they were fired on from the rear and could not be reinforced. It was a most uncomfortable position, aggravated by the fact that all the troop commanders had been wounded, but the Royal Marines remained steadfast. The daylight was by this time waning, and in the dusk other troops succeeded in driving in the enemy pockets of resistance and bringing help and ammunition to their exhausted comrades just in time to enable them to fight off a strong German counter attack.

That counter-attack was the final German effort, although they resisted strongly when the attack on the battery was resumed after daylight. By midday, however, the Germans had had enough and they began to surrender, coming up from their deep bunkers to lay down their arms to men who had fought their way indomitably forward without even the protection of a slit trench. When the German

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commander of this position surrendered he handed over his revolver to the officer commanding the Royal Marine Commando troops with the words: "If you think that I am a coward, shoot me." It was his way of paying tribute to the irresistible courage and determination of the Royal Marine Commandos.

It was not long after this episode that contact was made between the Royal Marine Commandos and the Army Commando which had been put ashore at Flushing, having assaulted the island from Breskens, across the estuary. The junction of these two forces meant that the south-western part of the perimeter of Walcheren was in our hands, but it did not mark the end of the battle for Walcheren. The Royal Marine Commandos which had moved northwards from the breach in the dyke had met with notable successes, but they still had much mopping-up to do. Moreover, consolidation was urgently necessary, for it was expected that the Germans might put in strong counter-attacks from the islands of North Beveland and Schouwen. Such counter-attacks never materialised, but they had to be guarded against at a time when the general situation on the island of Walcheren was causing anxiety. This was not due to failure of men or material, but even the toughest of Commando troops must show signs of weariness after 36 hours and more of hard fighting under most difficult and trying conditions. Moreover, the Commandos were running short of ammunition and of food and water, for the weather had deteriorated rapidly after the initial assault had been put ashore and had prevented the landing of supplies from the vessels which had been specially laden for this purpose. Moreover, distant German guns were registering with extreme accuracy on the tiny "beaches" on either side of the breach in the dyke.

The combination of the weather and the enemy's gunfire made the supply situation most acute, and a very serious situation might well have arisen had it not been for the adaptability of the trained Commando men, who captured and lived on German rations, and converted German weapons and ammunition to their own use pending the arrival of their overdue supplies. Even so the Royal Air Force was called upon to drop supplies to the Commandos—a task which they carried out successfully

ICE-CLAD FLIGHT-DECK OF THE *CAMPANIA*

Clearing snow and ice from the flight-deck of the escort-carrier *Campania* before setting out on the return journey to Britain. The enemy paid dearly for his attacks.

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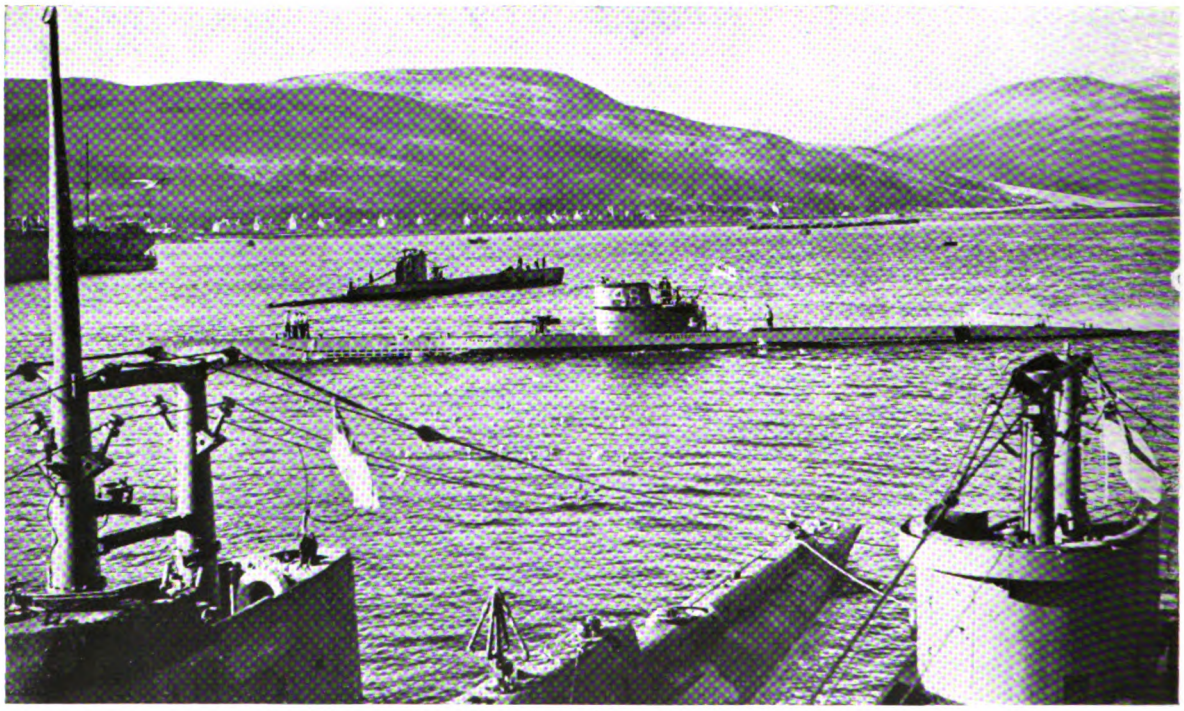
despite the difficulties imposed by the strong winds and the narrow strip of dry land between the sea and the flooded interior of the island.

And so, after one of the most difficult and hazardous of combined operations, most gallantly and skilfully carried out, the island of Walcheren—key to the Scheldt and the great port of Antwerp, fell to our arms.

CHAPTER IV

THE fall of Walcheren did not automatically open the port of Antwerp to the shipping of the Allies. It did, however, open the Scheldt to our minesweepers, which, as usual, preceded all other types of ship.

The 73 miles of the Scheldt which separates Antwerp from the open sea had been thickly sown by the Germans with every known variety of mine in all manner of combinations. To these were added ingenious anti-sweeping devices and a number of different sorts of underwater obstructions, many of them fitted with explosive charges. At Flushing the channel of the Scheldt is about a mile wide, and



ENEMY U-BOAT FLIES THE WHITE ENSIGN

H.M. submarine *Graph*, seen flying the White Ensign on the completion of a trial trip, was formerly a unit of the German navy. She was forced to surrender to a Hudson aircraft in 1941.

between that port and Antwerp it varies in width between 1,400 yards and 300 yards. There was therefore a considerable area of water to be cleared of mines, and the problem was aggravated by the strong currents and the fact that the charts available were based upon pre-war surveys, since when many of the shoals and sandbanks had shifted their positions. Surveying as well as minesweeping and obstacle clearance was therefore necessary.

The minesweepers tackled this difficult task with the keenness and determination for which they are justly famous. Some of the smaller minesweeping craft, in fact, actually entered the estuary and began work during the battle for Walcheren and before all the German batteries on that island had been silenced. Altogether, nearly 200 minesweepers took part in the work of clearing the Scheldt and opening the port of Antwerp to Allied shipping, and to these must be added small boats and even rubber dinghies. The density of the mines in the river was demonstrated by the first sweep, which was of necessity far from being complete. In this initial sweep more than seventy mines were exploded. This fact must be regarded in the light that the German mines were for the most part fitted with delay action mechanism

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A CRUISER, A SUBMARINE'S RETURN AND AN ESCORT-CARRIER MISHAP

Top, H.M. cruiser *Bellona* heading for the Norwegian coast to take part in an attack on an enemy convoy; middle left, officers of H.M. submarine *Tally-ho* on her return to base in Northern England after 12 months' service in Far East waters; right, members of the *Tally-ho's* crew with the Jolly Roger recording the submarine's kills; bottom, the recovery of a Firefly which dropped a wheel in the walkway when landing on H.M. escort-carrier *Empress*.

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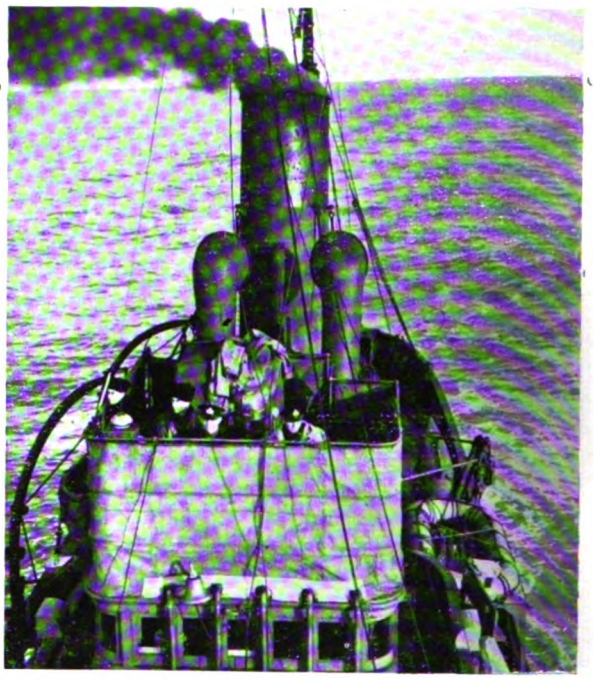
which allowed them to be swept over several times before they became "alive." The figure of seventy mines exploded must therefore be taken to represent only a small proportion of those swept over.

The attack on the island of Walcheren took place on November 1st. So fast and so well did the minesweepers and the obstacle clearance units work that the great port of Antwerp was opened to Allied shipping on November 28th. The dagger was duly poised at the heart of the German Reich. There remained, however, an anxious period during which the strength behind that dagger was built up by the Allied navies and merchant navies so that there should be no mistake about its final thrust.



TRACKING DOWN FLOATING DEATH

On the bridge of a British minesweeper working off the East Coast. Keen eyes maintain a constant vigil, searching the sea for floating mines.

There is no doubt that history will confirm that possession and use of the port of Antwerp was the deciding factor of the latter stages of the war in Europe. Let some of the statistics speak for themselves. Between the day of the opening of the port to Allied traffic and VE-day there had been landed in the port of Antwerp 2,233,087 tons of British military stores and 2,946,659 tons of military stores for the United States Army. There had also been landed at the port enormous numbers of military vehicles. The British quota of these military vehicles amounted to 54,089, while more than a million and a quarter tons of British bulk petrol had also been put ashore at Antwerp.

All this was not done without opposition from the enemy. Having lost the port and the positions which guarded its approaches, the Germans soon set about trying to deny us the use of the port by other means. This they did with devilish ingenuity. They subjected the town and port of Antwerp to the most prolonged and vicious attack by so-called V-weapons—the flying bomb and the rocket. The first of the V-weapons fell on the town of Antwerp on October 7th, 1944, and the last on March 30th, 1945. For the whole of those 175 days and nights the attack was sustained, a total of 2,448 V1 flying bombs and 1,261 V2 rockets falling on the town and port. On the worst day—March 8th, 1945—120 of these missiles fell. No less than 401 flying bombs and 520 rockets fell within a three-mile radius of "Navy House," from which the port and its activities were administered—an average of 21.2 flying bombs or rockets a day.

Under this scale of attack it was inevitable that the casualties should be heavy and the damage severe. Fortunately for the arms of the United Nations, however, the port authorities and the workmen never wavered, and the damage in the port was insignificant by comparison with the scale of attack and the damage in the town. In other words, the German V-weapon attack on Antwerp was yet another of the enemy's "terror offensives" which failed.

Meanwhile small units of the Royal Navy were fighting, in conjunction with their old comrades in adventure—the Commandos—a curious form of warfare in the channels between the islands to the north of the Scheldt estuary. This was a warfare of morale and intelligence.

Intelligence of the enemy troop movements in those islands was imperative, for there was always risk that the Germans would try to stage a southward offensive through the islands with the object of again closing the Scheldt estuary to Allied shipping. There is ample evidence, for instance, that such a southward drive was planned to coincide with Von Rundstedt's famous offensive in the Ardennes—the object of the twin offensives being to deny us the port of Antwerp and so leave the British and Canadian armies stranded without a supply port. The fact that this offensive from the north was contemplated by the enemy was proved by intelligence gained during Commando raids on the islands, which showed that the number of German troops on the island of Schouwen had risen suddenly from 700 men to nearly 6,000.

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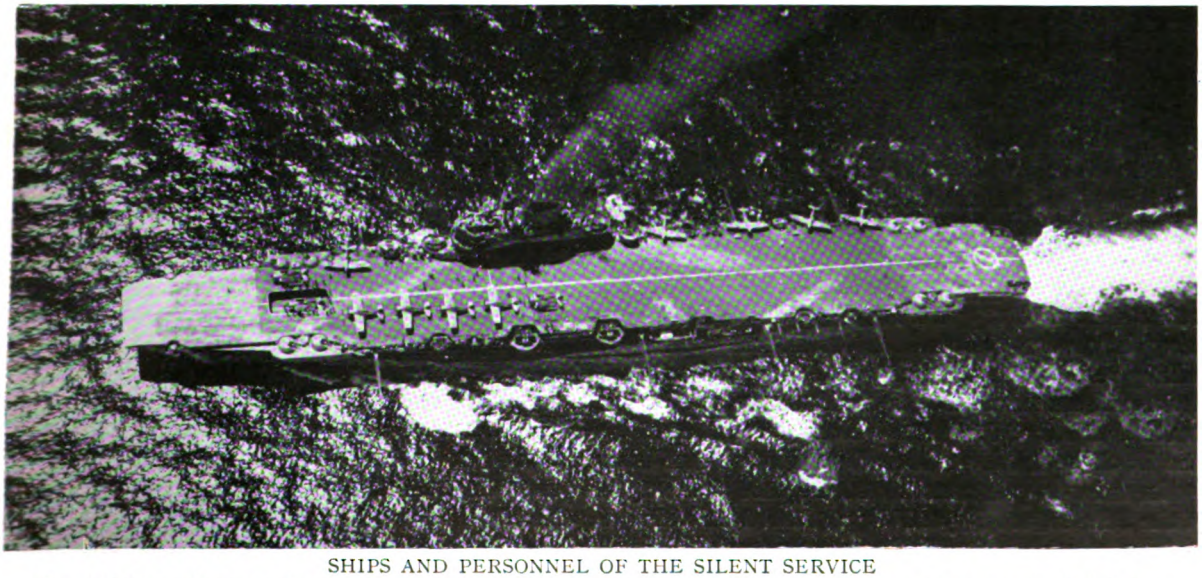

SHIPS AND PERSONNEL OF THE SILENT SERVICE

Top, H.M. aircraft-carrier *Furious* has her flight-deck swept by a giant wave as she ploughs through a heavy sea ; middle left, a **marine taking over the mail** for a landing craft from a Wren on duty in the Fleet Mail Office ; right, **Lieut. N. R. H. Rodney, R.N. (left), and First Lieut.** A. M. Cole-Hamilton, R.N., with Salvo, the ship's mascot, on board H.M.S. *Brecon*, a destroyer of the "Hunt" class ; bottom, an aerial view of H.M. aircraft-carrier *Formidable*.

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THE MEN IN CHARGE

Commanding Officers of an Escort Group of Captains Class frigates photographed on arrival back in harbour after a patrol in which they sank 3 U-boats and a possible fourth.

The Germans did not use these islands solely as military bases or as a threat of military action against the land dominating the estuary of the Sheldt. The islands, with their canals, and the channels between them proved ideal bases for such craft as midget submarines, and explosive motor boats which were operating against the Allied sea route across the North Sea to the Scheldt and Antwerp.

The Allied reply to the threat of these weapons was not only to reinforce the escorts of the convoys, but also to establish something in the nature of a close blockade of the channels and canals which the Germans were using as temporary advance bases. For this close blockade we used numbers of small support landing craft, which had to operate in waters charted so long ago that they were virtually uncharted These craft certainly destroyed some explosive motor boats and drove ashore and destroyed some midget submarines, but the full measure of their success cannot be measured in terms of their actual "kills," for their deterrent effect was considerable, and the information which they gained in the course of their patrols proved invaluable.

Apart from the explosive motor boats, which did not achieve any noteworthy success against the shipping on the Antwerp route, the Germans were using two or three types of midget submarine. The most successful of these types was that known by the Germans as the "Seehund." This was a two-man submarine carrying two torpedoes slung beneath the small saddle tanks on either side of the pressure hull and capable of operating on either side of the North Sea. As a refinement, the "seehund" could carry magnetic or acoustic mines instead of torpedoes and lay these in the convoy routes instead of risking attack by torpedo. The Germans obviously set much store by these craft as weapons against a short sea route such as that across the North Sea to Antwerp, for after the collapse of Germany it was found that one of the great U-boat pens at Kiel had been adapted to form a great bomb-proof assembly line for these craft, of which there were several dozen nearing completion.

In order to gain constant intelligence of enemy troop movements and activities in the islands north of the Scheldt, the Royal Navy operated a number of assault landing craft which used to carry out raids on the islands with Commando troops. The object was to keep the enemy always on the alert and so wear down his determination, while at the same time trying to capture a prisoner for interrogation.

All manner of ruses and dare-devil plans were put into operation with the object of forcing the enemy to show his hand. On one occasion a landing craft took a party of Royal Marine Commandos to the

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TRIUMPHAL RETURN OF A FRIGATE

Picture taken when an Escort Group of Captains Class frigates returned to harbour after a successful patrol against U-boats. It shows H.M.S. *Conn*, senior officer's ship of the Group, flying the Jolly Roger.

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island of Schouwen and landed them midway between two German strong points. As the landing craft "touched down" beneath the high dyke the sounds of a horse and cart coming along the road on the landward side of the dyke were heard. The Marines lay "doggo" while they listened to it passing. Then they clambered silently up the dyke and spread out along its top. No sooner had they done so than the noise of other horse-drawn vehicles was heard approaching. The Marines, outnumbered by more than three to one and midway between two German strongpoints, watched while a convoy of 20 wagons and more than 100 men passed within a few yards of them. There were no stragglers for them to "collect" so they sent scouts to find out where the convoy was going. The scouts trailed the convoy into the little town of Zerikzee, where they saw the wagons stop alongside some barges.

When the scouts had returned the Marines decided that it was all the more important to capture a German prisoner for interrogation, but they knew that the Germans were loath to leave the security of their strong points—they had had too many unpleasant experiences at the hands of the Commandos. The Marines therefore carried out a tempting ruse which they had prepared. They started up an outboard motor which sounded just like a motor cycle. Then they let off an explosive charge and stopped the motor abruptly. This was followed by one of the Commando men screaming for help in German. It was supposed to represent a German despatch rider running into a land mine and, wounded, screaming for assistance from his comrades. The Germans were taken in. Within a few moments a patrol came tumbling along the dyke from one of the strong points and ran straight into the ambush which the Marines had laid for it, quite unmoved by the number of flares which the enemy was using to try to illuminate the scene. The result was that several Germans were absent from the morning roll-call, and one wounded prisoner was taken back in the landing craft. Not content with this success, the expedition sought the co-operation of the Artillery to subject Zerikzee, where the German troops were loading the barges, to a heavy bombardment. Needless to say, the co-operation was most eagerly given.

Another form of sport which was indulged in by the Commando men in co-operation with the Navy was the planting of what were called "Cuckoos" on the enemy held islands. These were duly landed

AROUND THE JOLLY ROGER

Men of an Escort Group of Captains Class frigates after successful patrols. The five U-boats shows their claims of "kills," the crossed scalpels denote two surgical operations at sea, and the key is the Group sign.

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at night with great secrecy and "lay up" in flooded buildings or other cover behind the enemy positions in the dykes which held the sea at bay. They were provided with wireless sets and were able to direct our artillery fire on to targets with devastating effect and an uncanny accuracy which the enemy was never able to understand. There was a case in which a "Cuckoo" so directed the fire of our artillery that a party of Germans was literally chased backwards and forwards at the double before being finally disposed of.

All these small actions were of immense use, not only in keeping us fully informed of the activities of the enemy, but also in asserting and maintaining an ever-growing moral ascendancy over the Germans in the islands. This was important, for the lower the German morale the higher the morale of our own men, who were fighting under conditions of great hardship and danger, and the less the likelihood of the Germans causing trouble on the flank of the all-important Scheldt shipping route.

The force which waged this curious form of warfare was known as "Force T." It was the same force as had held the eastern flank of the Assault Area off the Normandy beachhead, and which had attacked

CIVILIANS EVACUATED FROM A NORWEGIAN ISLAND

British naval forces evacuating civilians from a Norwegian island where they had been living in earth huts and other improvised dwellings during the German occupation. They had been deprived of all means of subsistence.

the Westkapelle area of Walcheren. It was still commanded by Captain A. F. Pugsley, and consisted of a group of young officers and men for whom it would have been difficult to find equals in courage, self-reliance, and planned impudence in the face of the enemy. The task of holding the left flank of the armies and the flank of the all-important Antwerp supply route was difficult and dangerous in the extreme, but it was undertaken and carried out in a spirit which proved irresistible.

While the craft of "Force T" were harrying the enemy in the estuary of the three great rivers and in the off-lying islands—and afterwards carrying the spear-head of the attack in the second Battle of Arnhem, there was another naval force operating much farther inland. This was known as "Force U," and was commanded by Captain P. G. H. James, Royal Navy. It had an American naval counterpart working alongside it which was commanded by Commander W. J. Whiteside of the United States Naval Reserve.

It was "Force U" and its American counterpart which, operating 200 miles from the sea, effected the crossing of the Rhine and so wrote a new chapter in the annals of our long naval history.

It had long been appreciated by the Allied Commanders that the crossing of the Rhine would be a difficult operation, and one in which the armies would have to rely upon a fast ferry service of vessels

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of some sort until such time as bridgeheads had been established and consolidated on the eastern bank and bridges capable of carrying the heavy traffic required by the armies could be built. As a result a number of experiments had been carried out on the rivers of England to determine the type of craft most suited to the armies' requirements and the best way of handling them. These experiments led to the decision to employ two types of landing craft, one known as Landing Craft, Vehicle, Personnel, and the other as Landing Craft, Mechanised.

The officers and men who were to man these craft during the crossing of the Rhine had to be specially trained for the task, for it was quite unlike that for which the personnel of landing craft are normally trained. Instead of having to approach an open beach with little or no cross tide, they had, in the Rhine crossing, to be launched into the river down the muddy banks and then had to ply to and fro across the river and across the strong current.

There was another problem. That was to get the craft to the Rhine. It was successfully overcome, but it was no mean task, for it involved transporting the landing craft overland through ruined villages and over roads which had suffered in battle and through bombing. The magnitude of the transport task can be appreciated when it is realised that a Landing Craft, Mechanised, weighs 26 tons and, when loaded on to its carrier for overland transport, is 77 feet long, 14 feet wide, and 20 feet high.

The task was successfully accomplished, although one of the landing craft served as a curious inland monument for many months thereafter. The landing craft reached the Rhine, and they were instrumental in the forming and consolidation of the first bridgeheads on the eastern bank.

Like most other difficult jobs tackled by the officers and men who manned these little craft, it was undertaken in a spirit of lightheartedness which serious-minded Teutons would certainly have taken as indicating degradation and lack of appreciation of the importance of the task in hand.

There was, for instance, a certain Lieutenant Salmon who commanded one of the landing craft during

IN MEMORY OF THEIR DEAD LEADER

Men of the 2nd Escort Group looking at a plaque in remembrance of the late Captain F. J. Walker, C.B., D.S.O., unveiled at a service attended by officers and men of the 2nd Escort Group in the Flotilla Chapel, Gladstone Dock.

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CONVOY DUTY TRIUMPH OF H.M.C.S. *ST. THOMAS*

While on convoy escort duty in the Atlantic, H.M.C.S. *St. Thomas*, a corvette of the "Castle" class, less than eight months after being commissioned, sank a German U-boat. In the upper picture members of the corvette's victim are seen clinging to their rubber lifeboats while awaiting rescue; below, a member of the *St. Thomas's* crew, with revolver in hand, stands ready as survivors are brought aboard.

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Specially drawn

CONVOY WIPED OUT OFF NORWAY

When an enemy convoy and its escort was attempting to make a northward passage off the coast of Norway it was intercepted by ships of the Home Fleet under the command of Rear-Admiral Rhoderick McGrigor, C.B., D.S.O., flying his flag in the cruiser H.M.S. *Kent*. The convoy and escort, which included M-class minesweepers, were engaged off Lister Fjord, south of Egersund. The attack took the enemy completely by surprise and in the course of a brisk action nine of the 11 enemy ships were either blown up or sunk, and one supply ship or escort vessel was driven ashore. In order to carry out the attack H.M. ships had to steam close inshore, bringing them within range of enemy coastal batteries. The shore batteries joined in the action, but their fire, although spectacular, was

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by MONTAGUE B. BLACK, F.R.S.A.

SHIPS OF THE BRITISH NAVY

ineffective, and none of H.M. ships sustained any material damage. A naval observer, who watched the action from the bridge of H.M.S. *Kent*, said: "Our first 8-in. broadsides hit the leading escort vessels. I saw one rear out of the water, her screw turning idly. Then, silhouetted against the glowing sky, she slid bows first under the water. By this time another vessel was blazing like a coke oven. . . . Another ship was hit, evidently an ammunition carrier. She exploded with a brilliant red flash." After the action Rear-Admiral McGrigor said: "We caught the Hun in his nightshirt this time. . . . But I will give the ships their due, they fought back very courageously." Our artist, Montague B. Black, F.R.S.A., an accredited war correspondent, gives an impression of the action.

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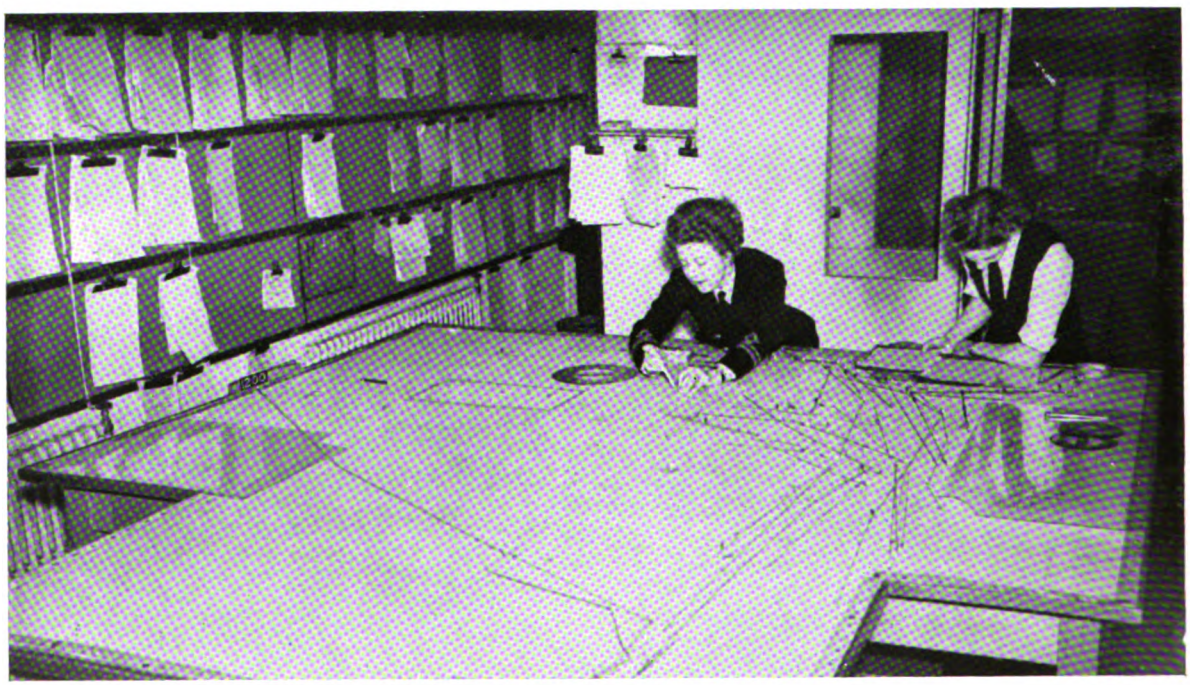
the crossing of the Rhine. He was known as "The Ross Salmon," for his initials were R.O.S.S., but his chief claim to fame lay not in his initials or his nickname, but in the fact that he invariably insisted in taking his ship into action wearing a most beautiful and highly burnished top hat made out of sheet brass.

Meanwhile our destroyers and Light Coastal Forces were kept busy protecting the vast amount of shipping using the narrow waters of the southern North Sea on their way to and from Antwerp, and also in driving back the many sorties which the German E-boats and midget submarines made against our east coast convoy routes. In the course of these duties they fought many highly successful actions. One of these was thus described officially by the Admiralty on December 12th.

"Strong forces of E-boats which attempted to operate on the Allied convoy route off the mouth of the Scheldt during the night of December 22nd/23rd were routed by H.M. Ships and Light Coastal Forces. Preliminary reports indicate that, during a series of fierce gun actions, at least two E-boats were sunk, two were probably sunk, and five others were badly damaged.

"First contact with the enemy was made by Light Coastal Forces under the command of Lieutenant



WESTERN APPROACHES OPERATIONS ROOM

The Battle of the Atlantic was planned throughout the war at Derby House, Liverpool, and the above, one of the series taken in April, 1945, shows the convoy plot, which gives the exact position of each convoy.

P. Magnus, R.N.V.R., when a group of E-boats, which was proceeding in a south-westerly direction, was intercepted south of the Hook of Holland.

"H.M. Ships attacked with gunfire and obtained repeated hits on several of the enemy vessels. During the action one of the E-boats was probably sunk and two others were damaged. Later the frigate H.M.S. *Torrington* (Lieutenant C. F. Parker, R.N.) encountered another group of E-boats approaching the convoy route off the mouth of the Scheldt but, on action being joined the enemy retired at high speed in an easterly direction. Shortly afterwards the destroyer H.M.S. *Walpole* (Lieutenant G. C. Crowley, D.S.C., R.N.), the frigate H.M.S. *Curzon* (Lieutenant A. A. Diggens, D.S.C., R.N.), and a unit of our Light Coastal Forces intercepted the same group of E-boats. During the brisk gun action which ensued two of the E-boats were sunk, one was probably sunk, and three others were severely damaged.

"A further group of E-boats which attempted to approach the convoy route during the early hours of the morning was driven off after an inconclusive engagement by H.M.S. *Torrington* and the corvette H.M.S. *Kittiwake* (Lieutenant J. S. Hough, R.N.R.)

"None of H.M. Ships which took part in these engagements sustained either casualties or damage."

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WESTERN APPROACHES OPERATIONS ROOM

The Battle of the Atlantic was planned throughout the war at Derby House, Liverpool, and the above—one of the series taken in April, 1945—shows the main plot on left and in the background the Home plot and enemy submarine report board. Discs on the main plot are the restricted bombing areas for aircraft of approximately 150 miles, where submarines of Allied Navies are under passage.

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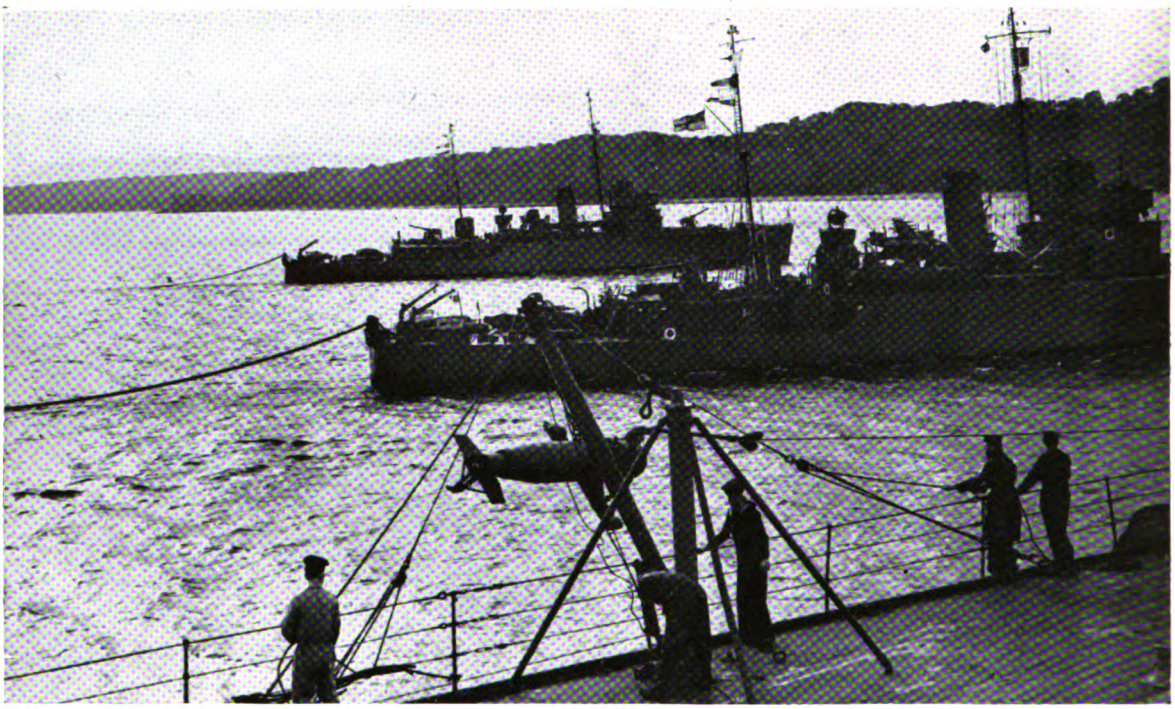

THE BEGINNING OF A VITAL MISSION

A picture taken from a warship as two of H.M. minesweepers sail out, trailing their Double L's on magnetic sweeps, to begin their task of keeping the channels clear of mines.

It had been a good night's work, which taught the German E-boats a sharp lesson.

As the plight of Germany became more and more desperate as a result of the huge reinforcements and supplies pouring into the Continent through the port of Antwerp the crews of the E-boats showed a greater disposition to stand and fight when they met our patrols. Here was the fierce courage of desperation. This was much in evidence on the very dark night of April 6th, 1945.

That night a unit of three of our motor torpedo boats led by Lieutenant J. May, R.N.V.R., ran into a group of five E-boats. The enemy was not seen until the leading motor torpedo boat came into collision with one of the E-boats and rolled right over, with the loss of all but three of her crew. One of the other two motor torpedo boats rammed another E-boat and, after breaking free, opened fire and scored at least six hits with her 25-pounder gun at a range of 25 yards. Then, unfortunately, the motor torpedo boat ran over the wreck of Lieutenant May's boat and was so damaged that it could only proceed stern-first. Nevertheless, the boat was kept in action, firing rapidly but accurately at an E-boat which lay disabled some 200 yards away and firing red flares. The remaining E-boats went off and it appears that these became involved in another action on the same night. Certainly both the E-boats which had been rammed sank, and a third E-boat was lost by the enemy that night.

The Light Coastal Forces, and particularly the motor launches, did most excellent work against the German midget submarines in the North Sea. Out of a total of 81 of these weapons sunk, probably sunk, or captured, the little ships of the Coastal Forces accounted for 23—a larger share than any other arm.

CHAPTER V

With events moving so rapidly and satisfactorily in the European war farther south it was small wonder that many people lost sight of the fact that the officers and men of the Royal Navy and the Merchant Navy were continuing to face great perils and endure great hardships in the Arctic in order to keep up the supply of war material from Britain and the United States to our Russian ally. People are prone to think that we supplied Russia only during the time that she was on the defensive. In fact,

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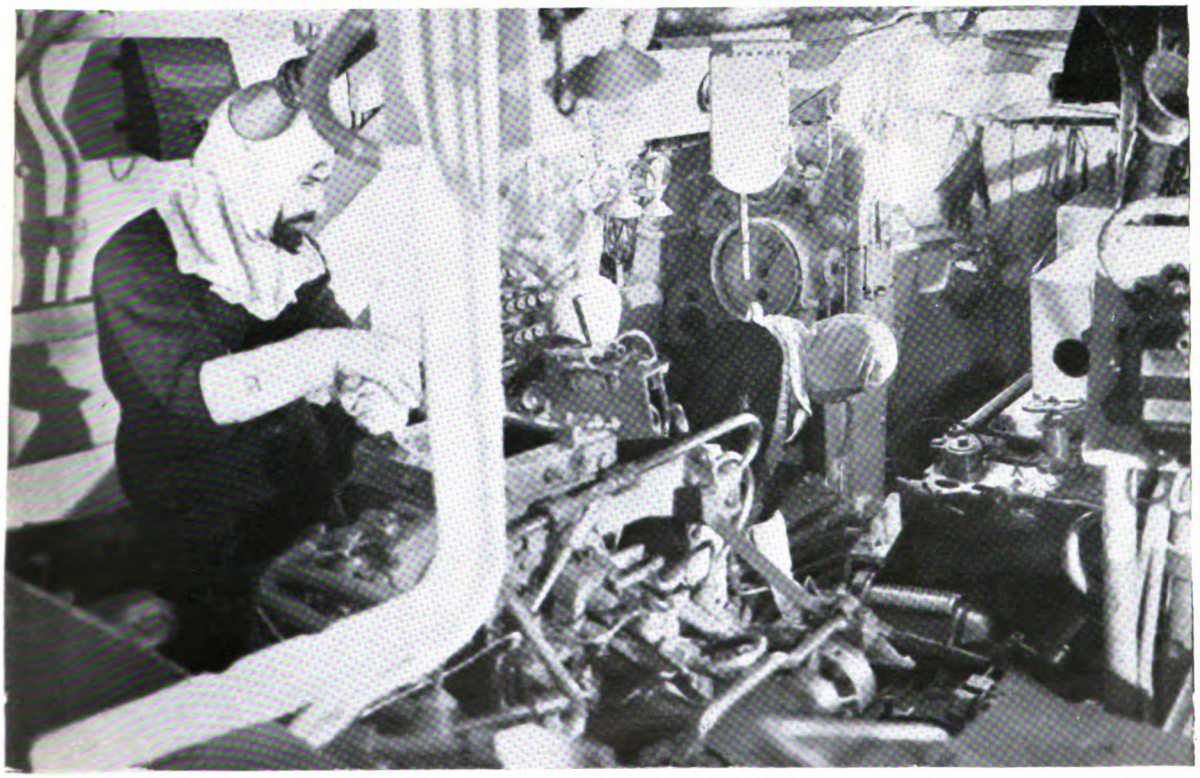
we continued to run convoys of ships laden with war material to the north Russian ports until the Russian armies were across the Oder and almost in the suburbs of Berlin.

It is not without significance that some of these north Russian convoys at this late stage of the war met with greater and more determined resistance from the Germans than had been experienced in Arctic waters for more than a year. If ever there was an unsolicited testimonial to the devoted work of our men under the most appalling conditions it is to be found in the desperation of the German attempts to stop the passage of these convoys even at the eleventh hour.

The resistance put up by the enemy to the passage of these north Russian convoys was at this period confined to U-boats and aircraft, for the German surface fleet was by this time reduced to small vessels incapable of operating for prolonged periods in Arctic waters. The great battleship *Tirpitz*, which had been put out of action by our midget submarines in September, 1943, and successfully attacked by aircraft of the Fleet Air Arm six months later, had been finally disposed of by Lancaster aircraft of Bomber Command of the Royal Air Force on November 12th, 1944. Despite the frequent attacks on this ship, and the certainty that she had, in the many attacks to which she had been subjected, suffered such damage as to render her far less of a menace than she would otherwise have been, her ultimate destruction lifted a load of anxiety from those in charge of the north Russian convoys and from the whole of the Home Fleet. This was not because the *Tirpitz* was in any sense a bogy, but prudent seamen carrying a great load of responsibility for the lives of thousands and the safe-conduct of operations having an important bearing upon the outcome of the war could not take risks by relying upon reports of damage, whether they came from secret "intelligence" sources or from air photographs. It may be true that the camera cannot lie, but clever camouflage has often given the lie to the camera.

The remainder of the German surface fleet could be counted out, for the ships capable of keeping to sea for long periods in bad weather were either out of action or in the Baltic and showing no disposition to try conclusions in the open sea with the Royal Navy. It is probable that the sinking of the *Scharnhorst*



GUNNERS OF H.M. CRUISER *BERWICK*

The interior of an 8-in. gun turret of H.M.S. *Berwick* showing gunners at their action stations. A cruiser of the "Kent" class, the *Berwick's* armament consists of eight 8-in. guns, eight 4-in. long-range A.A. guns and 20 smaller guns.

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by Admiral Sir Bruce Fraser had led to a fundamental change of policy on the part of the German Admiralty with regard to the use of their surface ships in the uncertain darkness of the Arctic winter.

But while the absence of powerful German surface units undoubtedly eased the responsibility of those holding high commands, the lot of the officers and men who were called upon to conduct the convoys to and from the north Russian ports of Murmansk and Archangel was not greatly ameliorated. For most of them the bitter hardship and the danger of the moment was sufficient—and there was plenty of both.

In considering the work of the officers and men who took these convoys through the Arctic it is as well to remember that the chances of being picked up alive from a sunken ship or a "ditched" aircraft were remote. There have been notable exceptions, but in the normal course of events a man cannot live in those waters in winter for more than fifteen to twenty minutes—and that is a short enough time for a ship to approach and pick up a semi-conscious man under action conditions.

Many of those convoys to north Russian ports have made naval history in one way or another, but that of mid-March 1945 was unique. Quite apart from the efforts of the enemy to prevent the passage of that convoy, the weather conditions experienced are likely to stand as the worst example ever experienced by seamen even of Arctic weather in winter. The barograph record of those days and nights, as recorded on board the ships which took part is a meteorological nightmare. It has to be seen to be believed. Not only were there very steep rises and falls, but the rises were high and the falls so pronounced and sudden that they almost justified the old sailors' saying that "the bottom has fallen out of the barometer." In fact, the needle of the barograph on board H.M.S. *Onslow*, one of the destroyers escorting that north Russian Convoy, actually went off the scale at the bottom of the graduated paper—and one has long suspected that graduated barograph papers were designed by a confirmed pessimist. If there have been other occasions on which the barograph has gone off the scale and there has been a gale

BRITAIN'S STONE FRIGATE

H.M.S. *Atlantic Isle* was the naval title chosen for the lonely island of Tristan da Cunha in the South Atlantic which during the war was equipped as an important Admiralty meteorological and radio station. This picture shows the West African surf boat used for the naming ceremony, and the naval guard of honour listening as Surgeon-Lieut.-Commander E. J. S. Woolley, R.N.V.R., read the commissioning order.

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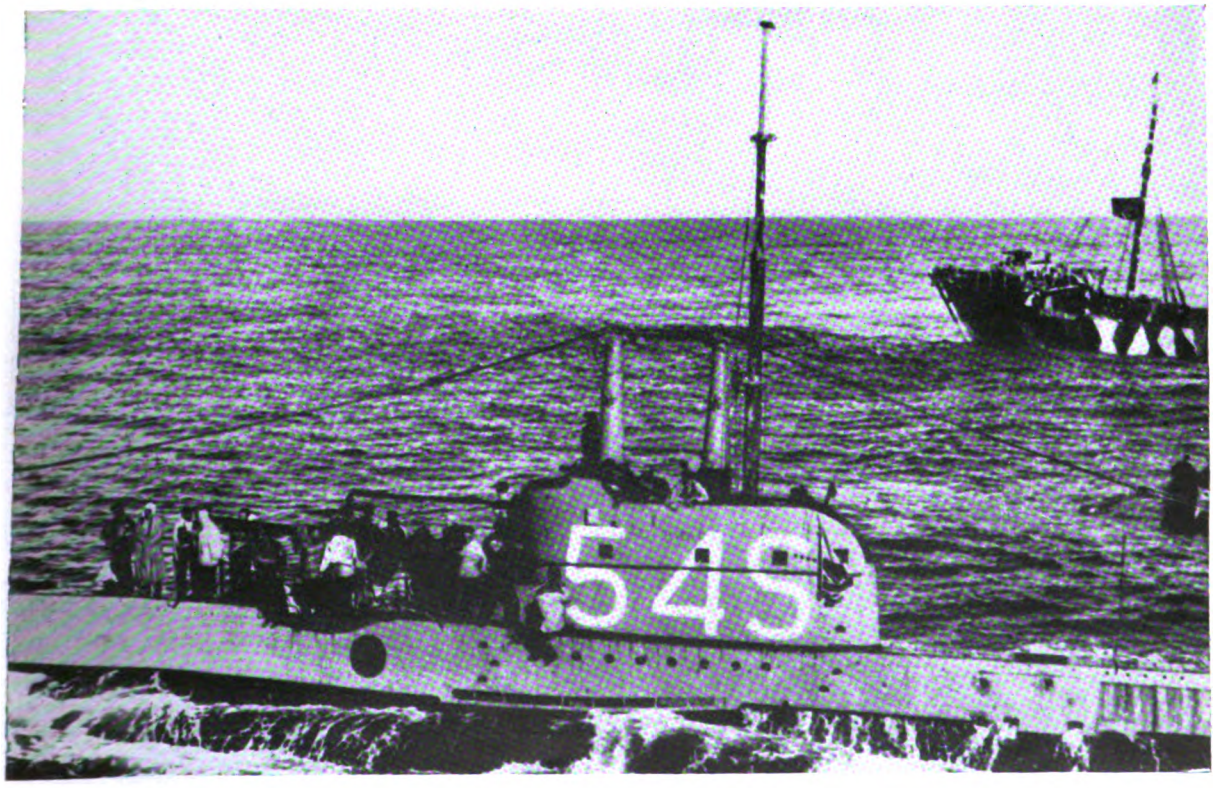

THE LAST OF H.M. SUBMARINE *SHARK*

The above pictures taken by the Germans show the *Shark* after she had been raked by gunfire from seaplanes, bombers and fighters, her guns silent, powerless to dive or steer, just before she was sunk by her own crew to prevent capture off Stavanger, Norway. Top, wounded being taken aboard a German trawler. Bottom, some of the crew on deck waiting the arrival of a boat from a German armed trawler.

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force 12 on the Beaufort Scale at the same time, one has not heard of them and they are worthy of place in the annals of the National Maritime Museum.

The gales experienced by this convoy were bad enough, but to them were added the most powerful raids by the German Air Force experienced by one of these north Russian convoys for two years, and a sustained attack by U-boats lasting more than twenty-four hours.

This convoy consigned to north Russian ports was large. It was taking railway locomotives, rolling stock, and other first priority materials to Russia so that there should be no slowing down of the Russian advance across eastern Germany on account of the great areas behind the advancing Russian armies which had been devastated by the war. To take these vital materials through to Russia more than 6,000 officers and men of the Royal Navy were engaged. To these must be added several thousand officers and men of the Merchant Fleets—both British and American, for there was in the convoy a number of American ships carrying the products of the American industrial genius direct to Russia.

MIGHTY BATTLESHIP GOES EAST

H.M. battleship *Duke of York* being towed out from her berth in Liverpool Docks at the beginning of her long voyage to join in the war in the Far East.

The whole operation was under the command of Rear-Admiral Rhoderick McGrigor, C.B., D.S.O., whose flag flew in the escort aircraft-carrier H.M.S. *Campania*.

Rear-Admiral McGrigor appreciated from the beginning that the passage of the convoy would be anything but easy. In fact, he said quite frankly before sailing that he thought the whole convoy, convoy escorts and covering force were "in for a sticky time." That, however, deterred no-one.

It was just after dawn on the second day out that a German long-distance reconnaissance aircraft sighted the convoy. From that moment it was obvious that the enemy would bring all the forces which were available to him against this convoy.

It must be remembered that these north Russian convoys were far more vulnerable than those in the broad Atlantic. Whatever their point of departure, they had to pass through the comparatively narrow defile between the north coast of Norway and the southern edge of the Arctic ice pack. In winter the edge of the Arctic ice comes down as far south as Bear Island, so that there is less than 250 miles

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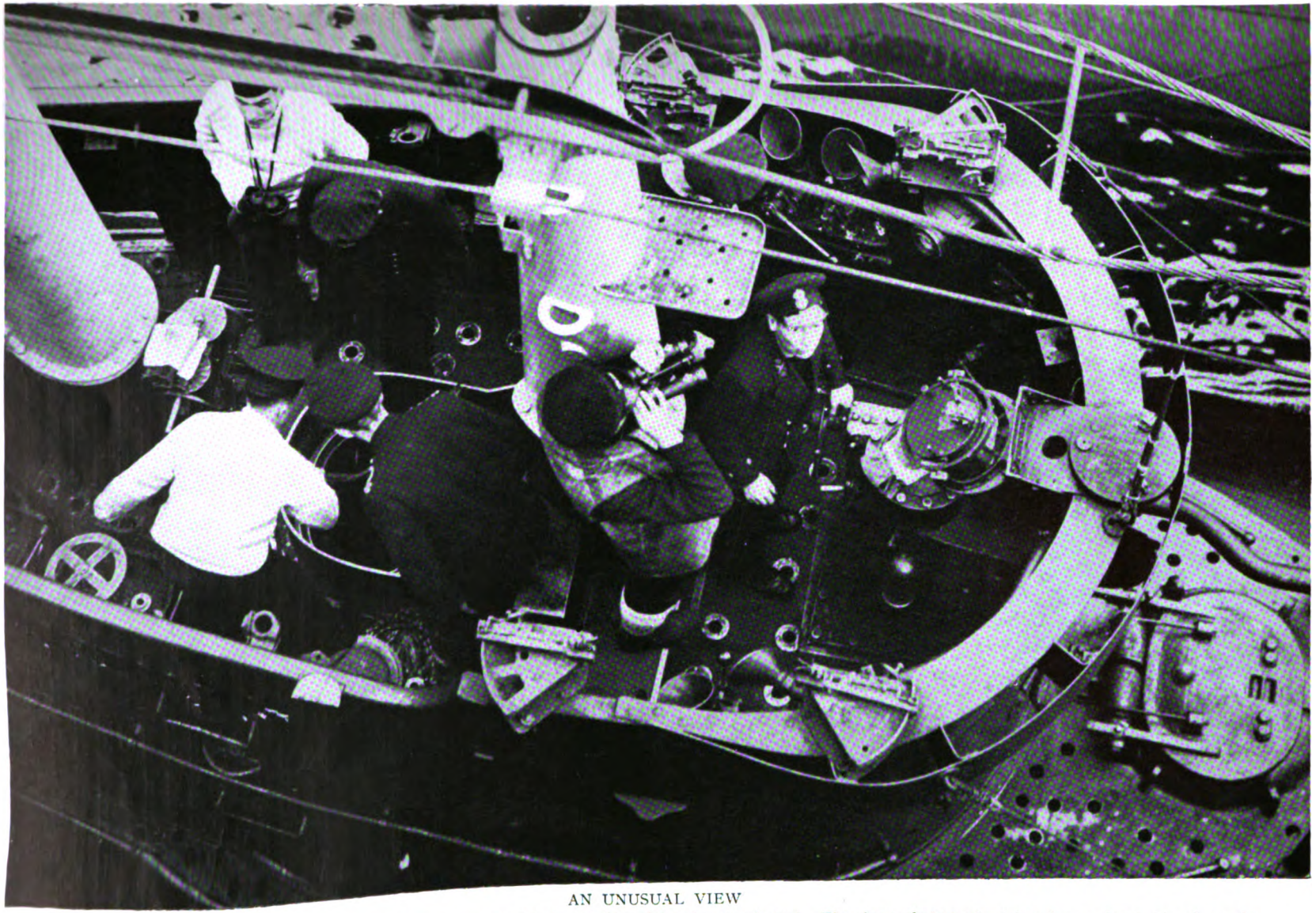

AN UNUSUAL VIEW

After every patrol, submarines return to their depot or parent ship for a refit and for the crew to rest. The above photograph—taken from a depot-ship, shows the conning tower of one of H.M. submarines.

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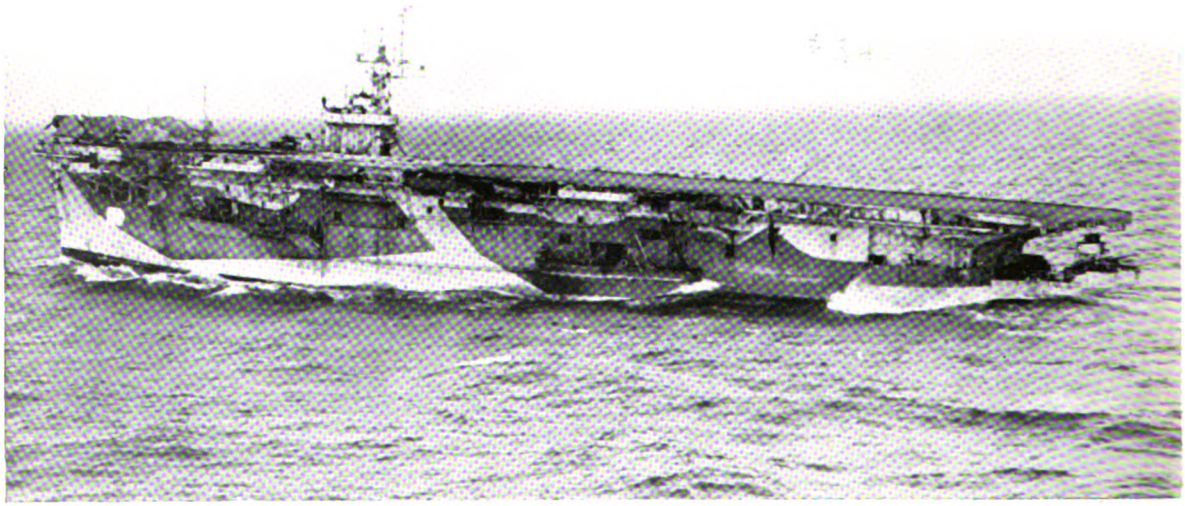
of free water between the ice and the Norwegian coast. This channel is not one which a convoy can pass through in a short time. It is one in which the convoy must travel for two or three days, and with the sure knowledge that all along the southern flank of its progress are German airfields and bases for U-boats and such surface ships as the enemy might have available. It is only when one appreciates these geographical facts, the prevailing weather conditions and the temperature of the water, that one can attempt to gauge the courage and hardihood of the men who sailed those north-Russian convoys.

On the morning after this particular convoy had been sighted by the longe-range German air reconnaissance, the first attack developed. This was made by fifteen Junkers 88 aircraft armed with torpedoes, and the attack developed in the first light of dawn. The convoy escorts were ready for them. No sooner had the enemy aircraft been reported by radar than fighters of the Fleet Air Arm took off from the flight deck of the escort carrier H.M.S. *Nairana*, commanded by Captain V. N. Surtees, D.S.O., R.N. Almost simultaneously the flashes of the guns of the outer escort showed that the battle was on.



LIMPING HOME AT TEN KNOTS

The escort-carrier H.M.S. *Nabob*, limping home with a skeleton crew after she had been hit by a torpedo 1,070 miles from her base. The photograph was taken from her sister escort-carrier H.M.S. *Trumpeter*.

Before the Fleet Air Arm fighters could get in to fighting distance of the enemy aircraft the Germans had suffered one casualty, a Junkers 88 falling to the guns of the corvette H.M.S. *Denbigh Castle*, commanded by Lieutenant-Commander G. Butcher, D.S.C., R.N.V.R. Then the Fleet Air Arm fighters tore in among the laden enemy aircraft. They may or may not have scored a great many "kills." Nobody had time to watch or to count. One thing was certain. The naval airmen did their job magnificently. They broke up the German formations and reduced their tactics to impotence. Instead of coming in to attack in groups in such a way that an alteration of course to avoid the torpedoes from one group would turn the ships into the torpedoes from another group, the Germans were forced to attack haphazard and "in penny numbers" as opportunity offered. In other words, instead of a planned attack they had to deliver a series of individual snap attacks. These Rear-Admiral McGrigor countered with consummate skill. Time and again he twisted and turned the convoy at the last moment, when the German pilots thought they had got in their attacks and when it was too late for them to alter their tactics, so that all they could do was draw off and try the attack all over again. This went on for a whole hour, but by the end of that time Rear-Admiral McGrigor had worn the enemy out. The German

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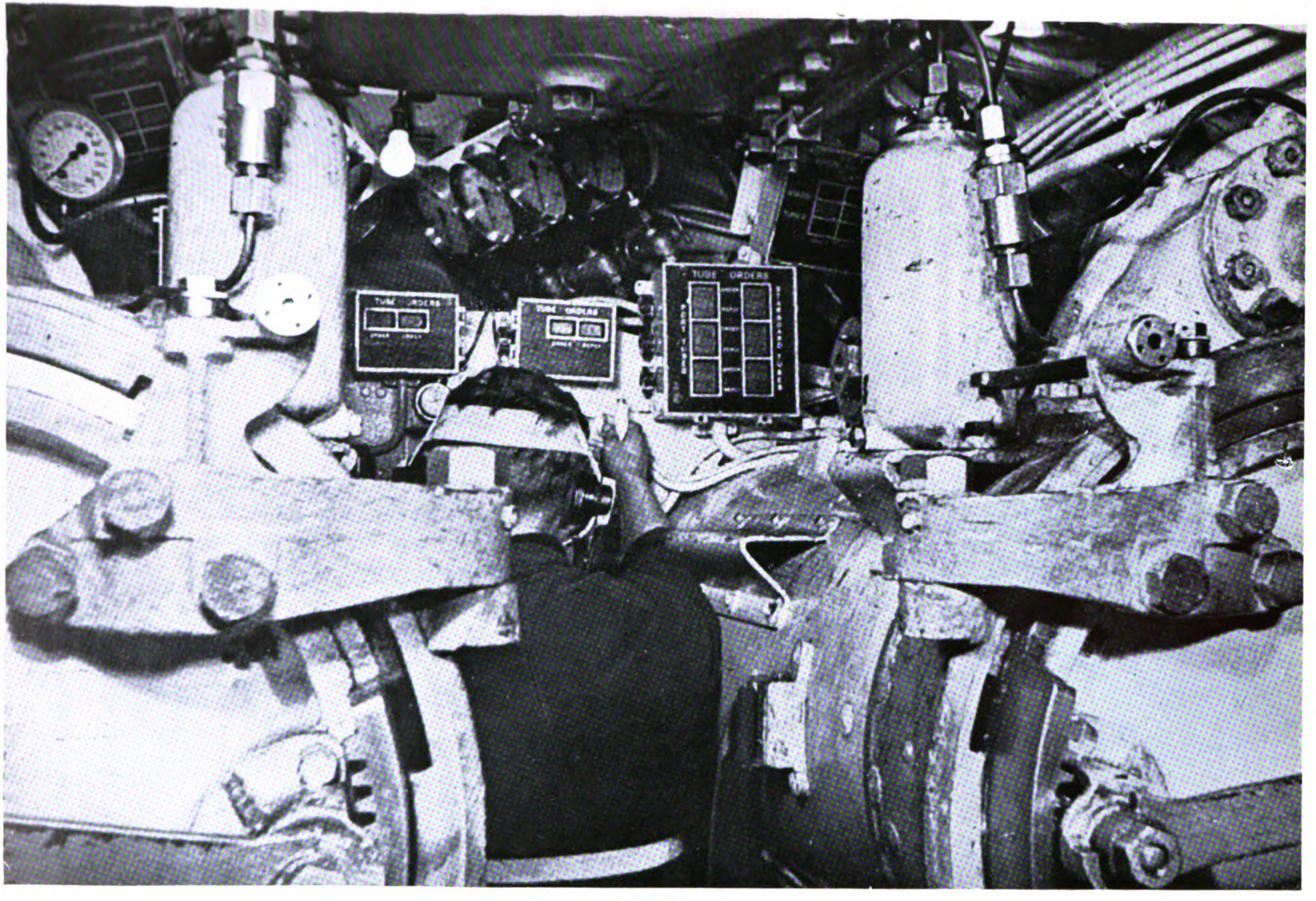

BRITAIN'S UNDERWATER FRONT

One of a set of pictures which illustrate the life lived by officers and men of our submarines. Picture shows: submarine on patrol; the torpedo gunner's mate is at the panel which controls the torpedoes.

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aircraft were short of petrol and were forced to give up the struggle—and not a single aircraft or a single torpedo had reached the convoy.

Two days later, when the convoy was passing fairly close to the watery grave of the *Scharnhorst*, sunk some months before by Admiral Sir Bruce Fraser, the enemy tried again. This time he sent thirty Junkers 88 torpedo carrying aircraft.

The Arctic gloom favoured the attackers, who were able to dodge in and out of the clouds and so escape some of the punishment which the Fleet Air Arm fighters and the guns of the convoy and its escorts sought to mete out to them. The fighters from the two escort aircraft-carriers, the *Campania* and the *Nairana*, dashed off to intercept the Germans, but, although they broke up the enemy's attacking formations and thus took the sting out of the attacks, they were unable to prevent all the German aircraft from getting through the screen.

AT A GERMAN RAILWAY-STATION

Osnabrueck was entered on April 3rd and this photograph shows Marine Commandos in the town's railway-station.

In a few moments there was in progress what appeared to be a most confused battle, and yet there was no confusion in the mind of Rear-Admiral McGrigor. He continued to handle the convoy and its escorts with the utmost coolness—the word "nonchalantly" was actually used about his actions by one of the officers who was present.

Soon the pace was so hot that it was impossible to tell whether enemy aircraft were falling to the fighters or to the guns; but there was no doubt that Junkers 88s were falling fast. On the horizon there rose a great mushroom of black smoke where one had died. Then one, badly on fire and losing height, streaked across the stern of the convoy like a comet. A third disappeared in the icy water a bare 400 yards from the flagship, leaving only a spreading patch of oil on the surface.

The battle raged for nearly an hour. In that time twelve of the German aircraft were certainly destroyed, and a further seven were damaged, four of them so badly that it was most unlikely that they could have reached their base. Not one ship of the convoy or its escort had been harmed.

It was clear that the Luftwaffe had had enough, for they left that convoy severely alone for the rest

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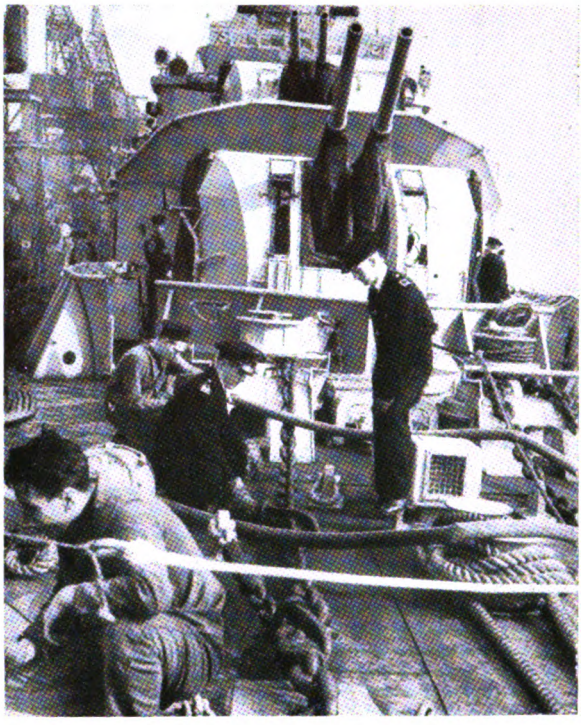

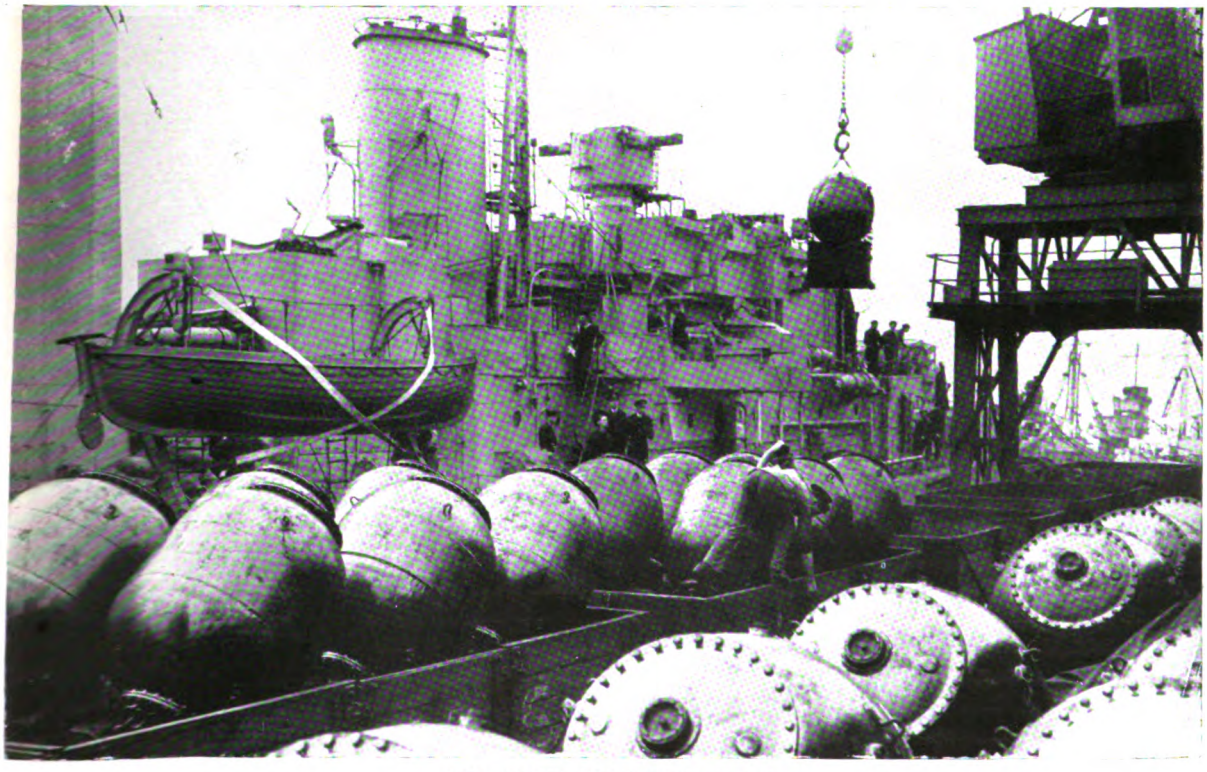

H.M. MINELAYER *MANXMAN*

The minelayer, H.M.S. *Manxman*, is a 400-foot long vessel with a speed equal to that of a modern battle-cruiser. Commissioned in 1941, she carried out her dangerous tasks from the Arctic to the Indian Ocean and finally became a casualty. Torpedoed in the engine-room, H.M.S. *Manxman* managed to limp home to port. Top left, shows a mine being loaded on to her deck ; top right, shows fuelling aboard ship ; lower picture shows a load of mines on the quayside ready to be taken aboard.

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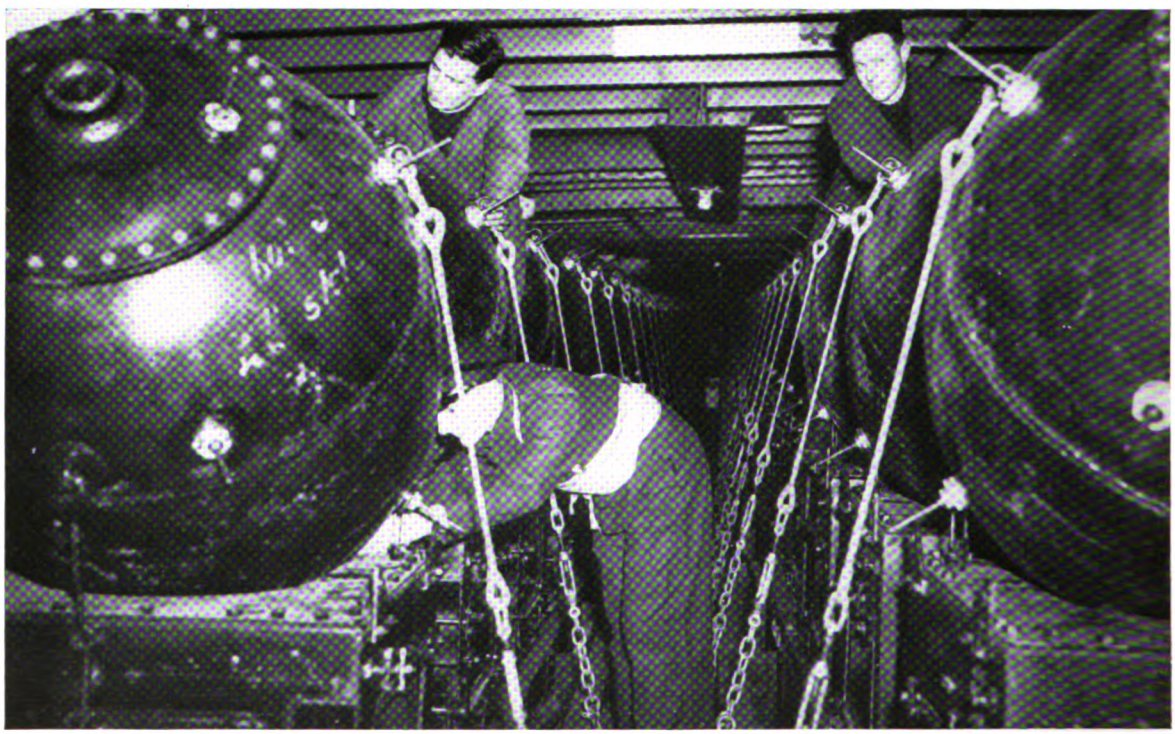
of its outward passage to Murmansk, where Rear-Admiral McGrigor delivered all the merchant ships and their cargoes intact. For him and his officers and men, however, the task was only half done, for they had to escort back to the United Kingdom a convoy of ships laden with timber and other products urgently required in England.

From the very beginning, the homeward voyage was an even tougher fight, and it was at once clear that the German High Command had sent U-boats to try to achieve where the Luftwaffe alone had failed. All through the first night after picking up the homeward bound convoy the distant boom of depth charges could be heard, and in the morning came the welcome news that the sloop H.M.S. *Lark* and the frigate H.M.S. *Alnwick Castle* had between them sunk a U-boat. The *Alnwick Castle* had on board one German survivor, so there could be no mistake about the U-boat having been destroyed.

During the forenoon of that day it became obvious that a very large pack of U-boats were in the vicinity and that they were being handled with considerable determination. First one of the escort



IN A BRITISH MINELAYER

The "mine avenue" in a British minelayer, a seemingly endless double row of mines. The men are making them ready for sowing in the sea by fixing the detonators.

vessels was hit and damaged by a torpedo. Then one of the merchant ships was hit and caught fire. Rear-Admiral McGrigor was forced to leave her, billowing smoke, to be towed back to Murmansk by the Russians. Meanwhile destroyers and corvettes were counter-attacking with depth charges all round the convoy. Rear-Admiral McGrigor estimated at this time that there were at least six or seven U-boats in actual touch with the convoy. All that day and late into the night the escorts hunted the U-boats without intermission, driving them away from the convoy and dropping hundreds of depth charges. Yet it could not be expected that, in an action of such intensity, we should escape without further injury. Shortly after dusk there was a brilliant orange flash which lit the whole sky. H.M.S. *Bluebell* had been hit by a torpedo. Destroyers raced to the rescue, but they found no trace of the ship and saved only one man of her gallant company—Petty Officer Albert Holmes, who, by some miraculous chance, had been blown clear of the ship by the explosion.

The battle continued through the night, but now the weather was beginning to take a hand. By morning it was blowing a full gale, and the sea had risen to such an extent that neither side could carry on the fight. By nightfall on that second day there was a 70 mile-an-hour gale blowing, with gusts

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up to a hundred miles an hour. Waves more than 60 feet high crashed down on the ships and the convoy was forced to heave to.

For thirty-six hours that gale raged. Then it moderated slightly and by the time the wind had gone down to 50 miles an hour Rear-Admiral McGrigor had succeeded in marshalling the convoy and reform it into some sort of order. He was only just in time, for a German long range reconnaissance aircraft then sighted the convoy and shortly afterwards twenty Junkers 88 torpedo-carrying aircraft came in to attack.

The destroyers H.M.S. *Onslow* and H.M.S. *Zealous* each shot down one enemy aircraft, but the honours of that battle must go to the pilots of the Fleet Air Arm fighters operating from the small escort aircraft-carriers under those appalling weather conditions. H.M.S. *Nairana* was dipping the bows of her flight-deck under the huge waves, and her screw almost cleared the water each time she tossed up her stern, and the wind was blowing at 70 miles an hour. A few years ago experts would have said that it was quite impossible to land fighter aircraft on the deck of a small aircraft-carrier under such conditions. Yet the young pilots did it, and, although one of them met with a mishap which severely damaged his aircraft, all four of them got down unhurt. To the amazement of all who were watching, the first aircraft

CHALKING MESSAGES ON MINES

The lighter side of minelaying, a terribly destructive form of warfare: ratings chalking designs and messages on mines. The picture was taken on board H.M. minelayer *Apollo* during an offensive lay in enemy waters.

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Specially drawn

UNSUCCESSFUL AIR-SEA ASSAULT ON AN

Combined action by H.M. ships and naval aircraft prevented strong forces of U-boats and torpedo-carrying aircraft from launching even one attack against an important convoy during a double passage from the United Kingdom to North Russia and back. In the course of these operations, which were carried out in weather conditions of extreme severity, at least two U-boats were destroyed and two of the torpedo-carrying aircraft and one reconnaissance plane were shot down into the sea for the cost of one naval aircraft only. The convoy was under the command of Rear-Admiral R. R. McGrigor, C.B., D.S.O., in H.M. escort-carrier *Campania* (Captain K. A.

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by MONTAGUE B. BLACK, F.R.S.A.

ALLIED CONVOY IN NORTHERN WATERS

Short, R.N.), whose aircraft made first contact with the enemy. One evening towards nightfall, following unsuccessful attacks by U-boats, during which one of the enemy submarines was sunk, two waves of Ju88 torpedo-carrying bombers attempted to approach the convoy simultaneously and from different direc'ions but were twice driven off, and in another attempt they achieved no better result. One of the Ju88s was shot down by the guns of H.M. cruiser *Bellona* (Captain C. F. W. Norris, D.S.O., R.N.) and another one by destroyers. Our artist, Montague B. Black, F.R.S.A., an accredited war correspondent, gives an impression of the air attack.

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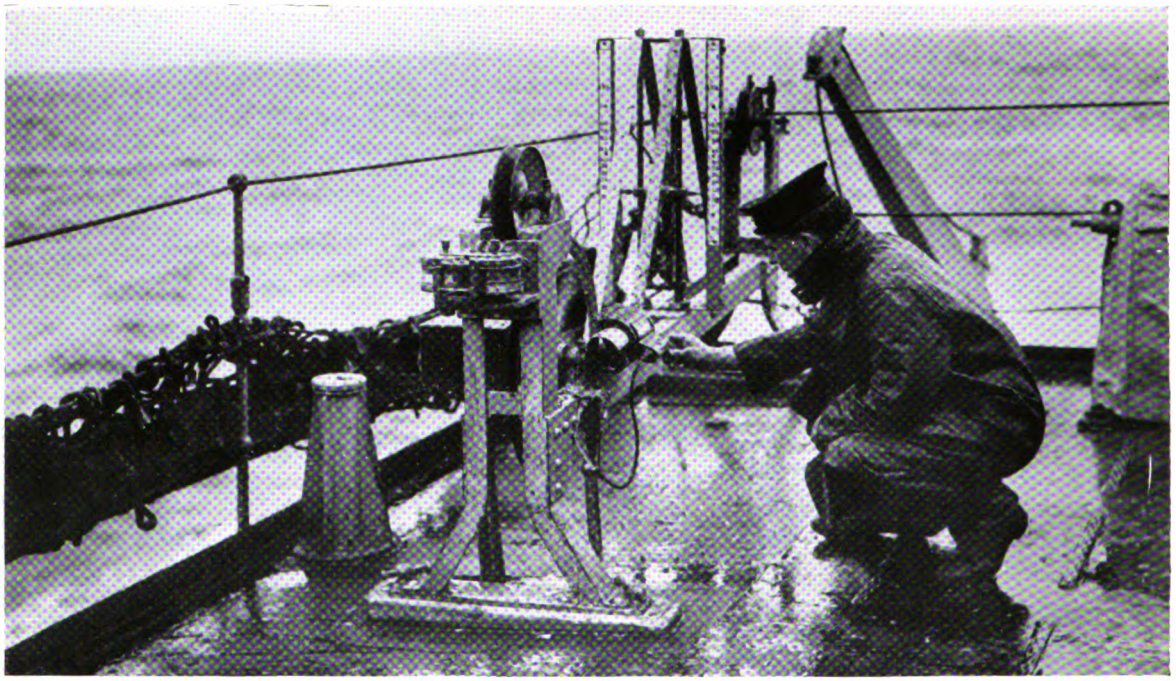

OPERATING THE TAUT WIRE MACHINE

A member of a minelayer crew at the taut wire machine which measures the distance at which mines are to be laid; for this purpose a large drum of piano wire is used.

to come in made a perfect landing on the heaving deck. The second bounced right over the arrester wires which are fitted across the deck to check the aircraft and hit the barrier, but the last two also made well-nigh perfect landings.

Those pilots had broken up the German formations and had shot down one Junkers 88 for certain and probably destroyed a second.

For the next seven days of that nightmare voyage the wind never dropped below gale force. Sometimes it moderated and blew at only about 60 miles an hour, but more often than not it was blowing a full hurricane of a hundred miles an hour. Only once before the convoy reached Britain was there a slight lull in the terrific weather. Then it was possible to take some stock of the situation. One of the merchant ships reported that a giant sea had split her deck. Another had her steering gear smashed by a sea and was being steered by a system of blocks and tackle attached to the rudder-head. Few were capable of anything like a reasonable speed, and there were some bad stragglers. Destroyers and other ships of the escort force reported smashed boats and wrecked equipment, while many of them were leaking as a result of the strains to which their hulls had been subjected.

With that lull in the weather there also came tragedy. Nineteen more German torpedo-carrying aircraft came out. This time they decided to leave the convoy alone, and they concentrated upon a lone straggler. That gallant ship never stood a chance against such a weight of attack, but she fought back grimly for a quarter of an hour and damaged at least two of the enemy aircraft before she was hit and sank. Providentially, her rafts floated and the majority of her devoted company were rescued by destroyers, who had to fight their way into the gale for three hours in order to reach the rafts.

The conditions for such as fell into the water in those latitudes is illustrated by the case of the crew of an aircraft which had been flying an anti-submarine patrol. When coming in to land on the aircraft-carrier in the darkness it missed the flight deck by two feet and pitched into the sea. The crew were picked up by a destroyer within twelve minutes, but even so the men were almost frozen to death, and their clothes had to be cut off them because their limbs would not bend. Yet they all survived.

At long last that convoy was delivered at its destination in the United Kingdom. Then, and only then, could Rear-Admiral McGrigor and his bone-weary officers and men relax and snatch some long-overdue rest. It is doubtful whether the majority of people have ever realised the extent of the hardships

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or the number of men who have faced them in this task of taking vital war materials to our Russian ally. Every convoy operation has been a double operation, involving a homeward as well as an outward convoy, with no rest for the escorts between the two parts of the operation. And the crews of the escorts involved in this North Russian convoy led by Rear-Admiral McGrigor amounted to more than 6,000 officers and men.

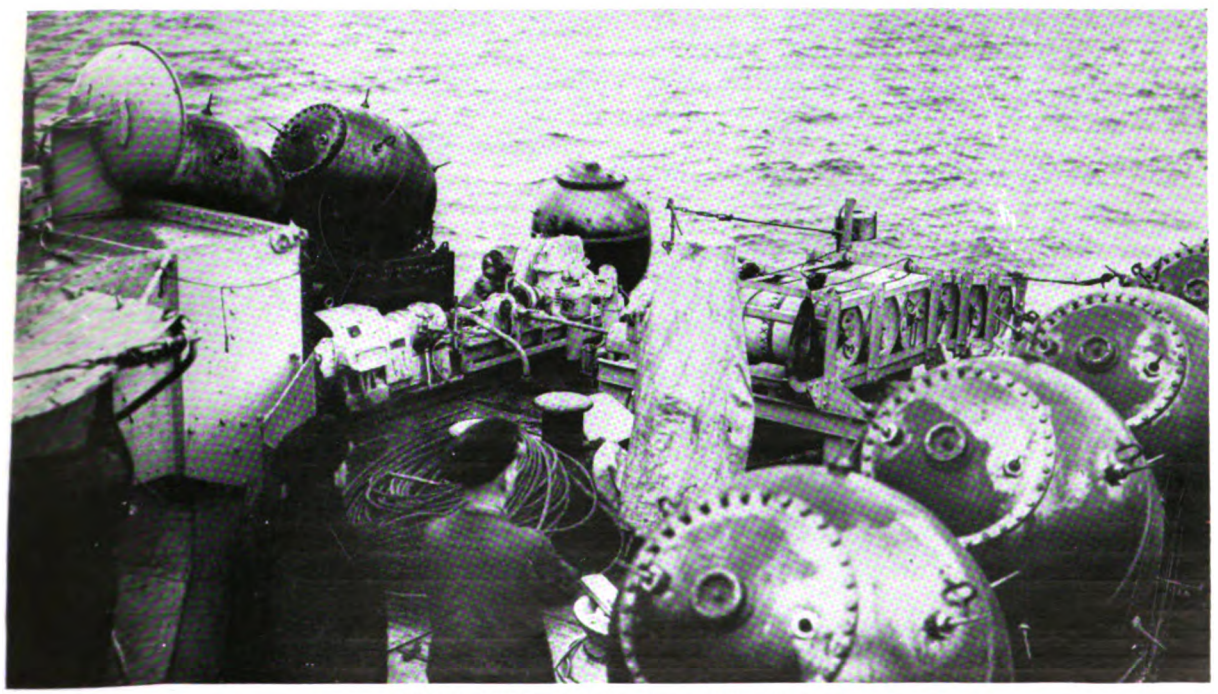
CHAPTER VI

DURING the last eight months of the European war there was a considerable increase in the activity of our Home Fleet off the Norwegian coast. The striking forces against enemy shipping were for the most part composed of aircraft from carriers, but it must not be forgotten that what might in R.A.F. parlance be termed "ground staff" without whom the aircraft could not hope successfully to operate were in this case not only the crews of the aircraft-carriers but also the crews of all ships, whether big or small, who were concerned in the operation.

The fact that the Royal Navy delivered a series of intense—and for the most part highly successful—attacks upon German or German-controlled shipping during the last months of the European war was not fortuitous. We were told little of the operations at the time, and still less of the part which these operations played in the general strategy of the United Nations at a time when the latter was moving fast towards its conclusion of final victory.

The truth is that these naval operations off the coast of Norway were as much a part of the final operations against Germany as the opening of the port of Antwerp and the crossing of the Rhine. It had become more and more clear that the downfall of Germany would be due to a complete breakdown of the transport organisation of the German High Command. It had been towards this objective that the combined efforts of the Light Coastal Forces and the Royal Air Force had been working in the narrow seas, and every blow which they had struck against the German coastal traffic had for long been of far more than intrinsic value because of the extra strain put upon German maritime traffic by the dislocation of rail and road transport and also of inland water transport.

After the surrender of Germany there came to light a great deal of evidence, all of which pointed



MINELAYER AT WORK SOWING MINES

A mine about to be dropped from a minelayer, while others move along the slipway ready to be dropped at requisite distances. British mines have sunk or damaged more than 1,000 ships during the war.

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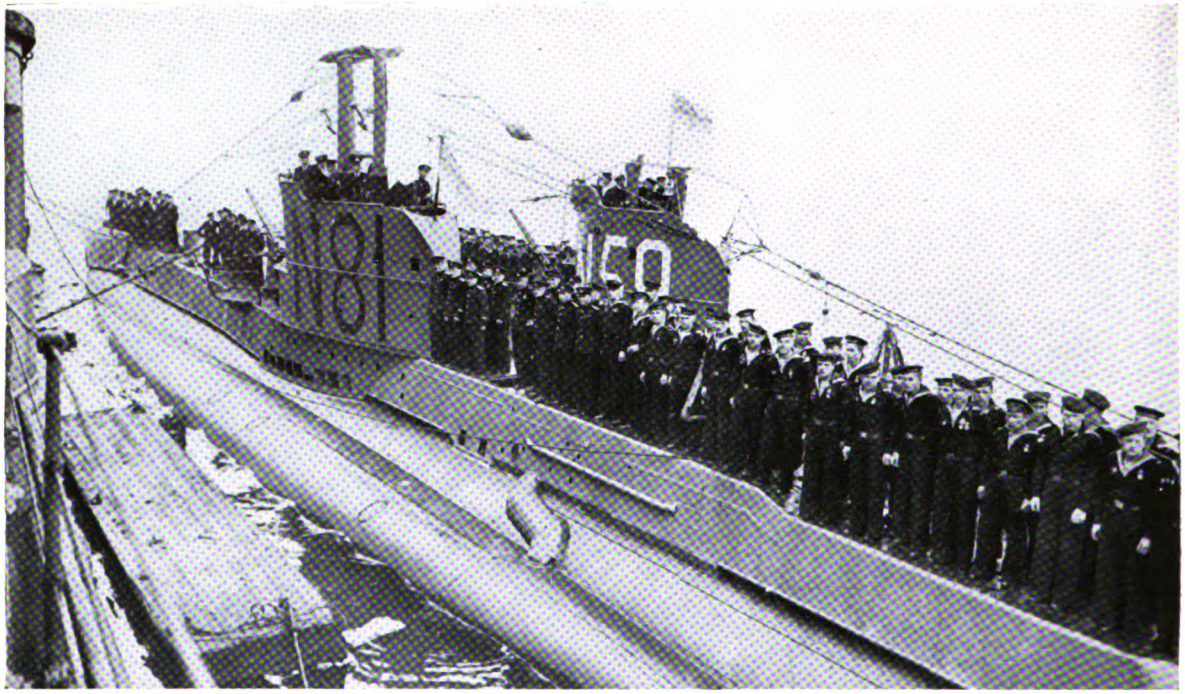

RUSSIANS MAN BRITISH SUBMARINES

A photograph taken at a British port in 1944 when H.M.S. *Royal Sovereign* and four British submarines were handed over to the Russian Navy. It shows Russian crews manning the submarines *Sunfish* and *Ursula*.

to the fact that the final defeat of Germany had been due to a breakdown of transport more than to any other cause.

The Germans were trying desperately to hold on to the ports of northern France and Belgium in order to deny their use to the Allies for as long as possible. They were using, or seeking to use, sea transport to reinforce and succour the garrisons of these ports. For this work they needed ships—although they often used landing craft which they had originally built for offensive operations. Thus the German High Command needed ships and yet more ships to carry out their strategy of delaying victory until their new V-weapons were ready in sufficient quantity to paralyse England and thus force a "stalemate peace." Ships, therefore, were the vital issue; and every ship which we could destroy was another nail in the coffin of the German High Command.

Nor was this the only reason for those "strikes" against enemy shipping in Norwegian waters. There were several divisions of German troops and much German military equipment in Norway, and it was important that the Germans should be deprived of the means of rushing these south to stiffen the defence of the German homeland.

One of the most spectacular and successful of these actions against enemy shipping off the Norwegian coast was that fought on the night of Sunday, November 12th, 1944. On this occasion the attacking force took the enemy completely by surprise and blew up or sank nine of the eleven enemy ships in convoy, while one other ship—whether a supply ship in convoy or an escort vessel is not certain—was driven ashore damaged and out of control.

The ships which took part in this highly successful "strike" were the cruisers H.M.S. *Kent* and H.M.S. *Bellona* and the destroyers *Myngs*, *Verulam* and *Zambesi* of the Royal Navy and the *Algonquin* of the Royal Canadian Navy. H.M.S. *Kent* was flying the flag of Rear-Admiral Rhoderick McGrigor, C.B., D.S.O.

Two things were notable about the strategic set-up before action was joined. One was that the German convoy was northbound and was apparently completely unaware that British warships were in the vicinity; the other was that the British ships, among them a large cruiser of 10,000 tons standard displacement, had to manœuvre and fight within a few hundred yards of the enemy-occupied Norwegian coast and only thirty miles from the entrance to the Skaggerak. In passing, one may note the fact

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that the Germans had always alluded to the defeat of the Battle of Jutland as "the victory of the Skaggerak."

Let an officer who actually witnessed that night's work tell the story in his own words.

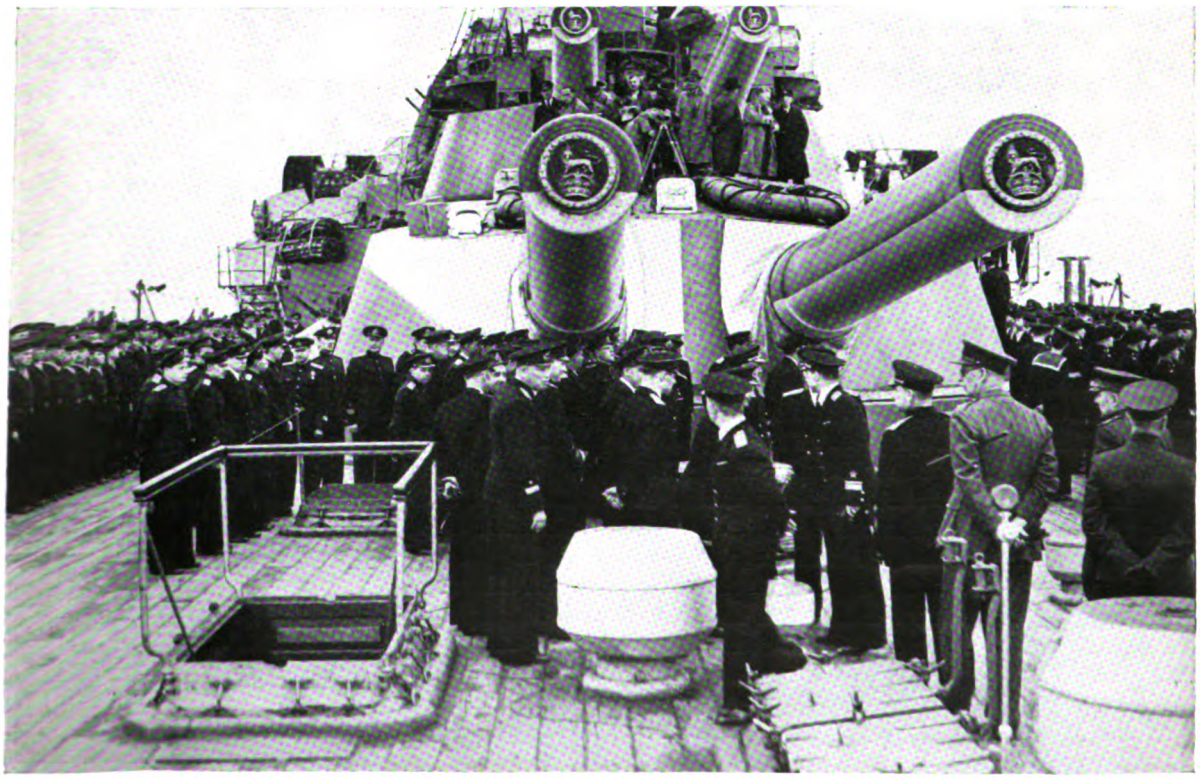
"I watched the battle from the bridge of H.M.S. *Kent*. For nearly two hours we had been steaming southwards at high speed down the Norwegian coast. As we passed Egersund Fiord shortly after 11 p.m. we saw the convoy coming north. It was almost dead in our track and was spread over a distance of ten miles. The night was perfect for a surprise attack—very dark, with good visibility and a calm sea.

"While we ranged our guns the enemy steamed unsuspectingly towards us. Four miles . . . three . . . two . . . Then we let them have it. They were taken completely by surprise and some of the ships were less than five miles from the shore.

"Our first 8-inch broadsides hit the leading escort vessels. I saw one rear out of the water, her screw turning idly. Then, silhouetted against the glowing sky, she slid bows first under water. By this time another vessel was blazing like a coke oven. The *Bellona* and the destroyers were scoring hits.

"The convoy scattered and began to fight back. Coloured tracer, interspersed with green and red distress signals, filled the air. Another ship was hit, evidently an ammunition carrier, for she exploded with a brilliant red flash. Behind us the *Bellona* and the destroyers were twisting and turning with all their guns roaring. All around us there seemed to be blazing and sinking ships. The action was fought so fast that it was almost impossible to keep a complete picture in one's mind. While I watched one ship go up, another was suffering the same fate from another quarter. Altogether, I saw six ships destroyed; one sank, two exploded, and three were reduced to blazing hulks. The *Myngs* and *Verulam* each torpedoed a ship, which instantly disintegrated.

"An escort vessel approached us, firing hard, but before she could do any damage she was hit aft and turned away to disappear in the darkness. A shore battery opened fire on us, and a lookout, whose duty it was to watch the disengaged side, reported it. Nobody took any notice, although at one time we were within two and a half miles of the shore.



WITH ALLIED SAILORS ABOARD

Another photograph taken at the handing over of H.M.S. *Royal Sovereign* with the submarines *Ursula*, *Unison*, *Unbroken*, and *Sunfish*. It shows the actual ceremony on board the battleship, with Russians on one side and British on the other.

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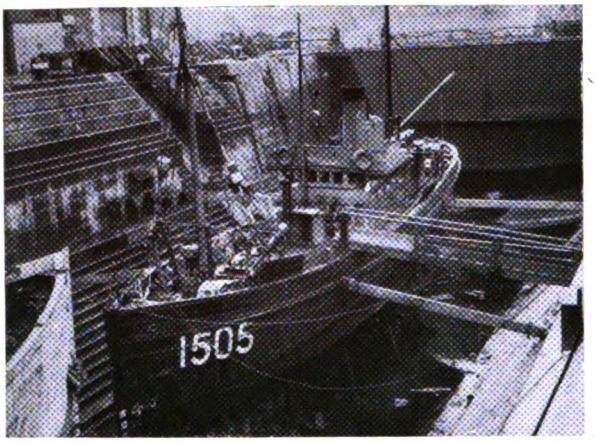

H.M. DRIFTER *FISHER BOY*

Back in dock for the first time in four years, H.M. drifter *Fisher Boy's* special job was the recovery intact of new types of enemy mines.

"At the end of twenty minutes the enemy fire had quietened considerably and the Admiral ordered his squadron to reform. As we drew away from the blazing holocaust he saw that there were still several ships afloat, so he ordered the destroyers to go in and finish them off. At full speed they steamed towards the shore. For a few moments there was silence and blackness. Then the starshell started and we saw the destroyers charging in with their guns blazing. More flashes and explosions followed, but the battle had drifted under the fire of the shore batteries, so the Admiral called off the destroyers."

Rear-Admiral McGrigor himself said of this action: "We caught the Hun in his nightshirt this time! His shore batteries didn't interfere until a quarter of an hour after the show started, although once I was so close to the land that I had to alter course to avoid a shoal." Such was the first action by surface ships to be fought as close to the southern Norwegian coast since the black days of 1940.

Even with the Royal Navy so militantly on the offensive, however, such successful offensive action by surface ships off the Norwegian coast was comparatively rare. That was due to lack of targets and to geography rather than to lack of offensive spirit. The Norwegian coast is protected, through nearly all its length, by a mass of off-lying islands which form a natural protective screen for shipping using the "Inner Leads," as the inshore channel is called. It is only in two places along the whole length of the Norwegian coast that ships have to emerge into open water. The chances, therefore, of bringing enemy shipping to action with surface ships was remote. For this reason the other arms of the Navy were utilised on this work—and with outstanding success.

Of these other arms, the most obvious were the submarines and the aircraft of the Fleet Air Arm, but in this warfare off the Norwegian coast motor torpedo boats manned by the patriots of the Royal Norwegian Navy also played an important part.

On November 13th, for instance, some of these Norwegian-manned motor torpedo boats intercepted a large enemy supply ship, with an armed trawler as escort, about 40 miles north of Bergen. The motor torpedo boats attacked so skilfully that both the supply ship and its escort were hit by torpedoes, and even the sceptical British Admiralty decided that both enemy vessels had almost certainly been sunk. The Norwegians suffered neither casualties nor damage.

Some months later—in March 1945—the Norwegian motor torpedo boats scored another notable success off the coast of their homeland. On this occasion the Norwegian-manned motor torpedo boats were patrolling off the Norwegian coast they knew so well, having made the long passage across the North Sea from the Shetlands, when out of the darkness loomed two ships, led by a German escort vessel. The supply ships were of about 5,000 tons and 3,000 tons respectively, and the convoy was southbound, the ships being heavily laden.

The motor torpedo boats at once manœuvred to the attack, and it is almost certain that the enemy was unaware of their presence before their torpedoes hit and exploded. Two torpedoes sent up high columns of water at each end of the largest, and leading, ship. From the second supply ship there was a blinding white flash as the torpedo hit and exploded, and this was followed by the roar and crackle of innumerable smaller explosions—sure indication that the ship hit had been laden with ammunition. It was not until the attack had been completed and the motor torpedo boats were disengaging that the escort vessel leading the convoy and the shore batteries "woke up." Then there broke out an uproar of gunfire and the sky was lit with starshells and tracers. All this, however, was merely further waste of German ammunition, for the motor torpedo boats were well out of harm's way.

While Norwegian patriots were doing great things against the Germans off the coast of Norway, the Royal Navy did not forget the Norwegian patriots ashore. In the whole history of this war it would

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THE "DASHING COMPANY" TO THE FORE

Light Coastal Forces of the Navy received a well-earned tribute from the First Lord of the Admiralty. He described them as "that dashing company" in which nine out of every ten officers and men were civilians before the war. This picture shows motor torpedo boats of the 71-ft. type at speed in heavy seas.

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be difficult to find a more stirring tale than that of the rescue by British destroyers of 525 Norwegians threatened with starvation and worse at the hands of the Germans.

For three months these Norwegians—most of them women and children—had been hiding from the Germans in the snow-covered island of Saroy—well within the Arctic Circle. These people had been hunted from cave to cave in the mountains by German patrols seeking more and more slave labour. Their only food for weeks had been scraps of fish and reindeer meat and their clothes were in rags. They were almost at the end of their tether when a secret mission was landed to tell them to be ready for rescue.

Then, at 3 o'clock on a March afternoon, Captain J. H. Allison, D.S.O., R.N., in H.M.S. *Zambesi*, led the destroyers, with all guns manned, down the eight-mile long Galten Fiord to the rescue. Let Commander R. F. Jessel, D.S.O., D.S.C., R.N., commanding H.M.S. *Zealous*, one of the destroyers concerned, take up the tale in his own words :

RED NAVY PATROL BOATS

Some of the "little ships" of the Red Banner Baltic Fleet returning to port after carrying out a patrol.

"It was a beautiful day and as we steamed up the fiord everything seemed quiet. There was not a sign of life. Then we saw a small boat at the head of the fiord. Things looked very suspicious until a man jumped up in the boat and fired a Very light. It was the pre-arranged signal, and then followed one of the most impressive sights I have ever seen. Down the snowy slopes on skis came the Norwegians, men and women carrying babies and their few humble belongings. Even the youngsters were on miniature skis."

In three hours the destroyers had finished their task in the fiord. Then came the difficult task of making the homeward passage without risk of meeting the enemy. All through the long Arctic darkness the destroyers steamed at full speed. There were amazing scenes on board the crowded destroyers. Bewildered old women in shawls, younger women with small children, and weary men, young and old, slept where they sat. They had been given a hot meal as soon as they had embarked—including the first vegetables they had tasted for many months, and their clothing had been eked out by issues from the "survivor's store."

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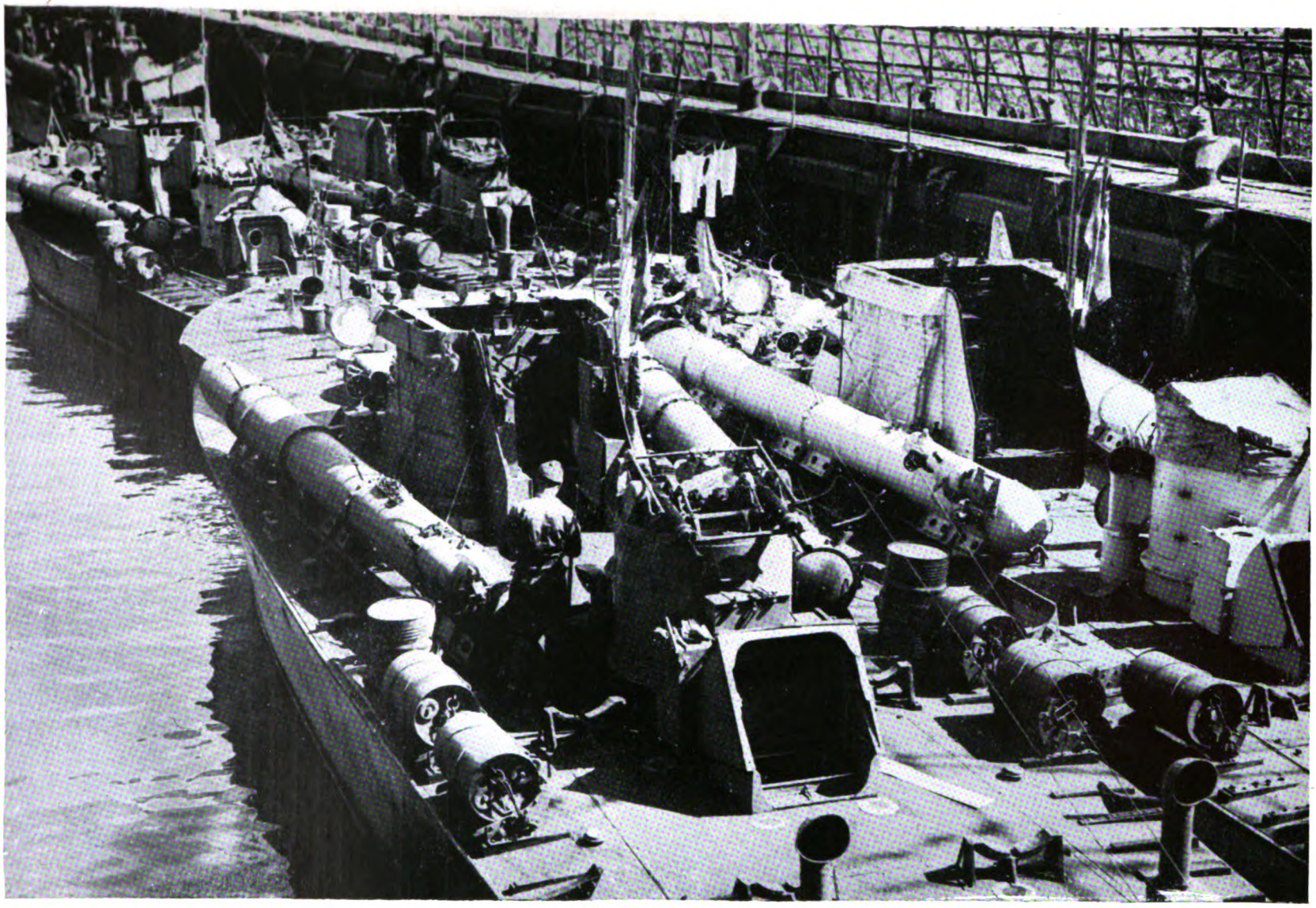

LIGHT COASTAL FORCES

Some of the small warships which have done good service against enemy vessels. The above shows motor torpedo boats in Ferry Dock, Dover, showing their decks with torpedo tubes and small armament.

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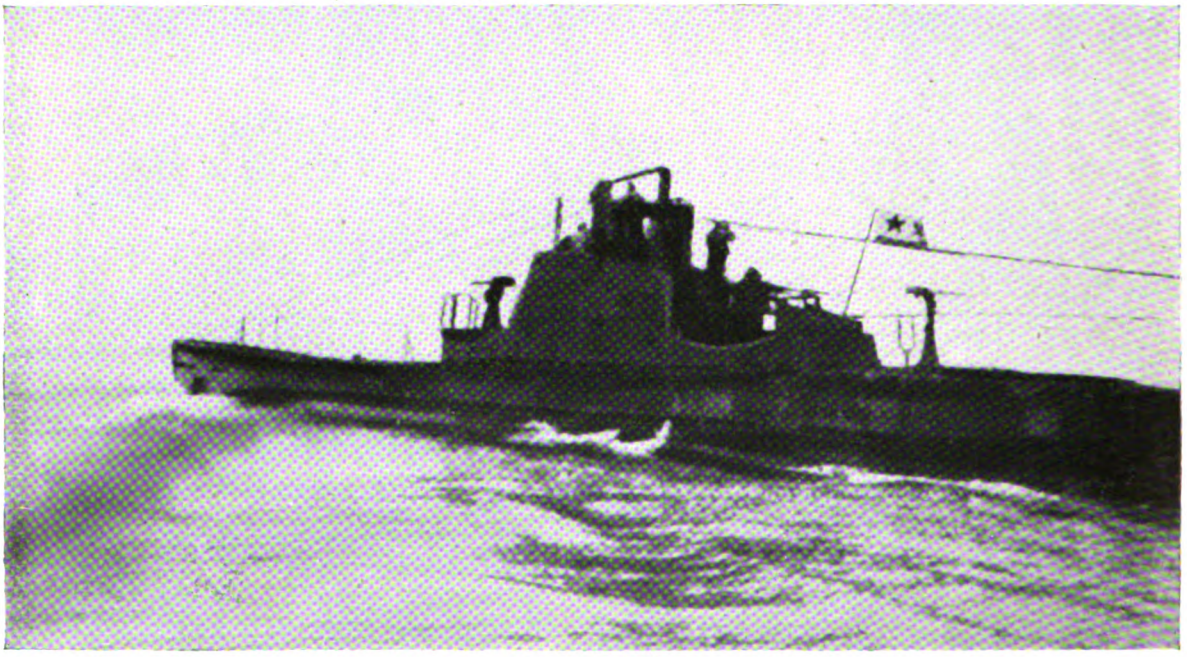
The story of those Norwegians is typical of German ruthlessness and brutality. A year before the Germans had ordered the population to leave their homes and move south in order to be rounded up for slave labour. To ensure that this order should be obeyed the Germans burnt to the ground every house on the island, slaughtered all the animals, and scorched the earth. The spirit of the hardy Norwegians, however, had risen above even these ordeals and they had continued to defy the German orders.

Aircraft of the Fleet Air Arm, chiefly Avengers and Wildcats operating from escort aircraft-carriers with cruisers and destroyers in support, played a most important part in the destruction and paralysis of German shipping off the Norwegian coast.

On Saturday and Sunday, October 14th and 15th, 1944, Avengers and Wildcats from the escort aircraft-carriers H.M.S. *Trumpeter* and H.M.S. *Fencer* carried out a series of successful "strikes" in the approaches to Trondheim Fiord. One medium-sized supply ship was found and bomb hits were scored on it, so that it must have been very seriously damaged even if it did not become a total loss. Two anti-aircraft ships stationed at the entrance to the fiord were successfully attacked by Wildcats and both



RUSSIA'S BLACK SEA FLEET

With the German and Rumanian forces in the Crimea in a state of rout, a Soviet submarine waits for any attempt at evacuation by sea from Sebastopol.

vessels were left blazing. Other aircraft shot up shore batteries, flak positions, and other German installations on shore. Neither the ships nor the aircraft suffered casualties or damage.

A fortnight later the Admiralty was able to announce that a more extended and even more successful series of operations had been carried out, this time in the Bodo area, farther north. The importance of this series of operations can be judged from the fact that they were carried out under the command of Admiral Sir Henry Moore, K.C.B., C.V.O., D.S.O., Commander-in-Chief of the Home Fleet.

The results achieved were certainly highly gratifying. Six enemy ships were sunk, comprising two supply ships, a medium-sized oil tanker, and aircraft tender, and two naval auxiliary vessels. Moreover, a large U-boat was attacked and driven ashore in a damaged condition, while nineteen other enemy vessels, including seven large and one medium-sized supply ships were damaged, and an armed coaster and an armed trawler were driven ashore. Nor was this the sum total of the results achieved, for mines were also laid by our aircraft, who also took the opportunity of attacking a number of shore installations, among them a U-boat depot, wireless stations, oil storage tanks and shore batteries.

The credit side was very good indeed, and fortunately the debit was small. Five aircraft did not return to the aircraft-carriers, but the pilot of one of them was known to be safe.

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ESCORT-CARRIER, TRAWLER AND NEW SUBMARINE

Top, H.M. escort-carrier *Tracker* with a Swordfish aircraft on the flight-deck having its wings spread; middle left, officers of H.M. trawler *Stoke City*; right, Yeoman of the Signals of H.M. destroyer *Wolfhound* who helped to drive off three enemy E-boats with his Lewis gun; bottom, a new submarine entering the fitting-out basin after being launched.

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A month later Wildcat aircraft from the escort aircraft-carrier H.M.S. *Pursuer* were ranging into Trondheim fiord, where they dealt faithfully with two German armed trawlers as well as some enemy installations on land at the entrance to the fiord. This occasion demonstrated the care with which our naval airmen were selecting their targets on these "strikes," for the Admiralty announced that two other vessels encountered during this operation were found on investigation to be Norwegian and were therefore not attacked.

In the early hours of Friday, January 12th, 1945, the surface ships of the Home Fleet were again busy raiding the German shipping routes off the Norwegian coast. This time they were much farther south, close to Egersund, which is almost at the entrance to the Skaggerak.

The British force was under the command of Rear-Admiral McGrigor whose flag was on this occasion flying in the cruiser H.M.S. *Norfolk*. He had with him the cruiser H.M.S. *Bellona*, the escort aircraft-carriers H.M.S. *Premier* and H.M.S. *Trumpeter* and the three destroyers *Onslow*, *Orwell* and *Onslaught*.

It was a fine, clear night, and the British force was sweeping to the southward when a north-bound enemy convoy was sighted against the snow-covered hills. Very soon the British ships opened fire

MODERN BRITISH CRUISER

H.M.S. *Nigeria* an 8,000-ton cruiser, a development from the *Newcastle* and *Belfast* designs. Armament, twelve 6-in., eight 4-in. A.A. and numerous smaller guns, six 21-in. torpedo tubes, speed 33 knots.

with starshell to illuminate the enemy, and action was joined. This time the German defences were very much on the alert. The German coastal batteries opened fire in a few moments, and the German searchlights made it most difficult to see the effect of the gunfire of our ships or to make the necessary spotting corrections. Despite this, however, the fire of our ships was most effective.

In the early stages of the action a dramatic diversion was caused by a U-boat, which was detected on the seaward side of our force. Her presence may have been a coincidence, or she may have been stationed there as a trap for any British raiding force which might put in an appearance. The U-boat was, however, promptly forced to dive by the guns of H.M.S. *Norfolk*, whereupon the destroyers subjected her to intensive depth charge attack. The results of that depth charge attack could not, of course, be assessed, but at the least it ensured that the U-boat would take no further part in the action. She was not seen or detected again.

The British guns were quick to get the range and begin hitting the enemy ships, many of which were seen to sink or disintegrate, in some cases to the accompaniment of spectacular explosions which told of cargoes of ammunition. It was described by one who was there as a magnificent sight, with the glowing balls of red fire which had been ships a few moments before contrasting vividly with the white light of the starshells suspended above them. One blazing mass disappeared as the ship turned turtle. Another

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Avenger and Wildcat aircraft operating from the three escort aircraft-carriers H.M.S. *Searcher*, H.M.S. *Queen*, and H.M.S. *Trumpeter* attacked a U-boat depot ship, which had a U-boat lying alongside. A number of bomb hits were seen on both the depot ship and the U-boat. The depot ship caught fire and then blew up, and it was considered that the U-boat had probably also been destroyed. During the same operation a German tanker fell victim to another group of our aircraft. She was sunk, and two direct hits with bombs were scored on the anti-aircraft ship which was acting as her escort. This ship was left burning and in a seriously damaged condition. Unfortunately, the Fleet Air Arm lost two pilots on this occasion.

This was the last occasion on which German shipping was seen off the Norwegian coast. It had been progressively paralysed by the repeated actions of the Royal Navy and the Norwegian Navy over a period of many arduous months. These actions had certainly contributed to a considerable degree to the strain under which the German transport system and the German nation collapsed.

CHAPTER VII

WITH events moving so rapidly in the European theatre of war towards the climax of victory it was not altogether surprising that the Battle of the Atlantic—that struggle which had begun with the sinking of the liner S.S. *Athenia* within a few hours of the outbreak of war, and which would continue until the final surrender of the last of the U-boats—receded into the background of the public mind. Other factors played their part in thrusting the all-important Battle of the Atlantic into the background. It was universally but erroneously accepted that the U-boats had suffered such a measure of defeat that the trade routes were no longer seriously threatened. Then there was the Anglo-American agreement that no detailed news of the progress of the Atlantic should be given, apart from the monthly statements issued jointly by the British Prime Minister and the President of the United States, until months after the event. It followed, therefore, that interest flagged, and also that on the collapse of Germany the

LAUNCHING OF H.M.S. *INDEFATIGABLE* AND AN INSPECTION BY THE KING

Top, the aircraft-carrier H.M.S. *Indefatigable* going down the slips when launched by the Dowager Marchioness of Milford Haven; **middle,** a broadside view of the *Indefatigable*, which has a displacement of 23,000 tons and a speed of more than 30 knots; **bottom,** H.M. the King inspecting Royal Marine gunners on the flight-deck of the *Indefatigable* before her departure for Far East waters.

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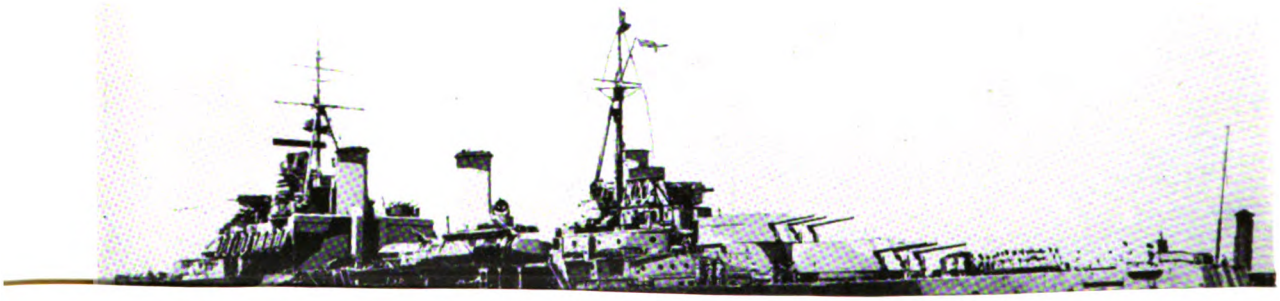

—an "M" class minesweeper—blew up. Others began trying to work their way towards the shore in order to beach themselves. Seeing this move, Rear-Admiral McGrigor closed the range still farther in order rapidly to finish off some burning wrecks, and at one time in the freakish glare the enemy coast appeared no farther away than the south bank of the Thames from the Houses of Parliament. So close were the ships that after the engagement Captain C. W. F. Norris of H.M.S. *Bellona* signalled to the Admiral: "I thought you were going to call on the mayor when you ordered that last turn to port."

It had been a short but highly successful action. The enemy convoy had consisted of seven or eight ships, including a large oil tanker and two "M" class minesweepers. The big tanker and one "M" class minesweeper and two other ships were certainly sunk, while all the other ships were left burning furiously. One or two of them might have been successfully beached, but even so they would have been so damaged as to be useless for many months to come.

The British force did not receive a scratch, although next morning the Germans tried to wreak vengeance by attacking the force with torpedo-carrying aircraft while it was withdrawing. The attack, however, was broken up and driven off by the Fleet Air Arm fighters from the two escort aircraft-carriers. These fighters shot down two of the enemy aircraft, and, although two British aircraft were lost, both the pilots were rescued.

The same area of the Norwegian coast was the scene of another successful raid in the early hours of April 4th, 1945. This time the force consisted only of destroyers and was under the command of Captain H. W. S. Browning, O.B.E., R.N., in H.M.S. *Onslow*. The *Onslow* was accompanied by the *Zealous* and *Zest* of the Royal Navy and the *Iroquois* of the Royal Canadian Navy.

This destroyer force found an enemy convoy of four supply ships escorted by three escort vessels of the frigate type, and at once attacked with torpedoes and gunfire. One of the German supply ships was sunk by torpedo; a second supply ship was hit several times by gunfire and left in flames; and a third supply ship was probably hit by torpedo. One of the German escort vessels was also severely mauled by gunfire. Our destroyers had only superficial splinter damage and did not suffer any casualties.

Exactly a month later carrier-borne aircraft of the Fleet Air Arm were at it again in the far north.

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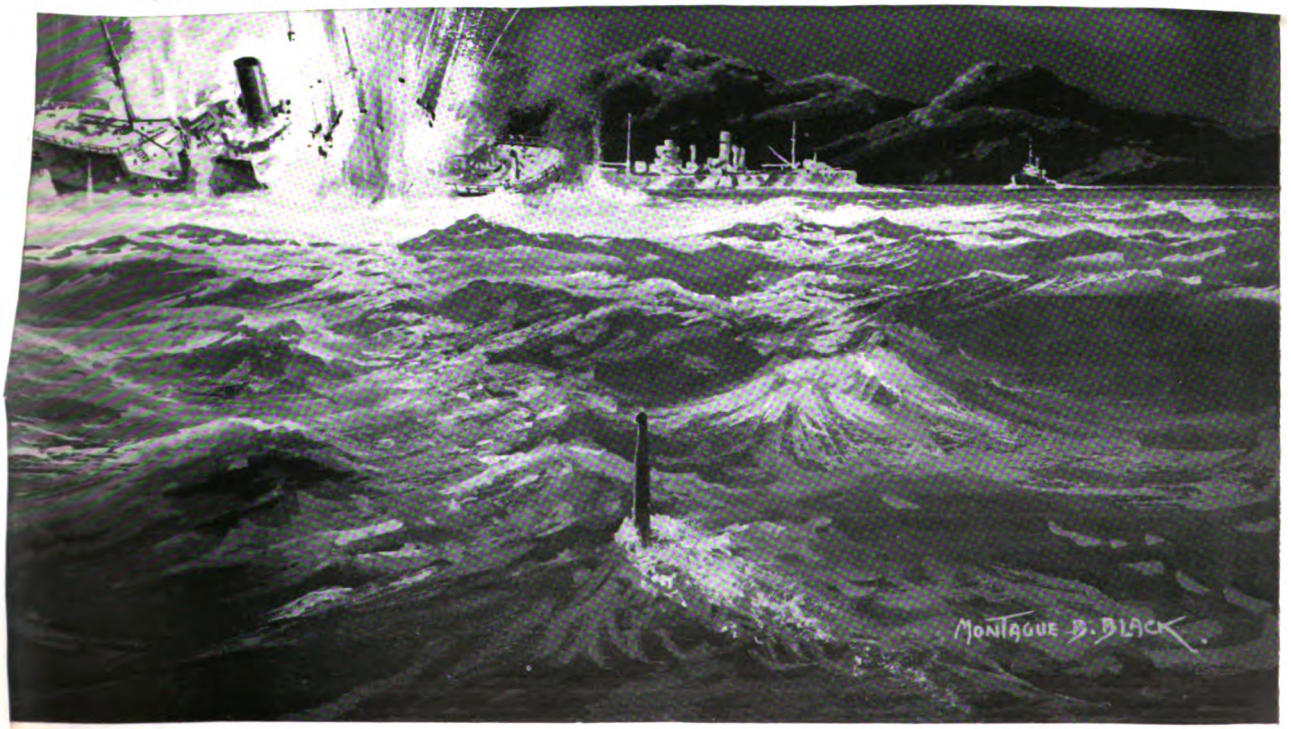

by MONTAGUE B. BLACK, F.R.S.A.

ESTROYED OFF NORWAY BY H.M.S. *SCEPTRE*

McIntosh said: "It was a very dark night when we sighted the convoy. There were three ships and three escorts, and we went in to carry out a 'snap' attack and got torpedo hits on each of the two leading ships. The first went up in really big style; the second ship, which was hit by two torpedoes, burst into flames and then suddenly disappeared. An escort started a counter-attack, but by that time we were well in the deep field." Our special artist, Montague B. Black, F.R.S.A., gives an impression of the action.

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A MIGHTY GERMAN WARSHIP

Under the terms of the surrender all German ships were to be handed over to the Allies. Here the *Prinz Eugen*, heavy cruiser, is floating in the docks at Copenhagen, while a Danish sentry is on duty at the quayside.

news of the Battle of the Atlantic was overdue by a considerable time. With events moving so rapidly after VE-day it is hardly surprising that this "stale" news was altogether overlooked.

The combined effect of these restrictions upon news of the Battle of the Atlantic led to far less than justice being done to the officers and men of the escort groups and other units who held the Atlantic sea lanes open to British and American shipping during the months when more and more traffic was passing in order to expedite the defeat of Germany.

The month of October 1944 yielded to the U-boats the lowest total of Allied merchant ship losses of the entire war. To have been able to reduce the Allied shipping losses to such an extent after the U-boats had returned to their hunting grounds equipped with new devices, and when there was far more Allied shipping at sea, was an achievement which played an important part in the conduct of the war over the next six months.

To this achievement the joint Downing Street and White House statement did far less than justice. This statement read: "The scope of the German U-boats' activities in October 1944 was materially below that of any other month of the war; in consequence of which the number of United Nations' merchant vessels sunk by German submarines during the month was also the lowest of any month of the entire war. Although the number of German U-boats destroyed was less than has come to be considered a good monthly 'bag,' it compares favourably with the number of Allied merchant vessels sunk by U-boats. The Allies continue to supply on schedule their ever-growing armies in Europe."

In order to appreciate the full importance of this official statement and the effort and sea supremacy which it involved it is necessary to consider it against the background of the sea war at that stage of the war.

By October 1944 the German U-boat arm had lost the tremendous strategic advantage which the possession of the French Atlantic ports had conferred upon it in 1940. It is as well to remember that this strategic advantage was then considered by the German High Command as likely to be decisive. On the other hand, Germany still held the whole of the Norwegian coast in October 1944, and this amounted to a very large part of the strategic advantage seized in 1940, particularly for the U-boats. This was well appreciated by the Allies, for Admiral Sir Bertram Ramsay, the Allied Naval Commander-in-Chief had laid on as a pre-requisite for the invasion of Normandy a heavy anti-U-boat offensive off the Norwegian

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bases. On the other end of the scale must be recorded the fact that there were far more Allied merchant ships at sea on the Atlantic trade routes than at any other period of the war. In the months of late 1939 and early 1940 which had produced low totals of casualties due to U-boats the Allied merchant ships had consisted only of British ships and a comparatively small tonnage of other ships which had been chartered by the British Ministry of War Transport. The merchant fleets of the other Allies at that time did not constitute, in the Atlantic, a formidable total of tonnage. In October 1944, however, this tonnage had been swollen by chartering from countries which had been overrun by the enemy, and also by the tremendous merchant-ship building effort of the United States.

In other words, there were far more targets for the U-boats and yet the U-boats had achieved much less. Nor is that the whole of the story. The anti-submarine methods of the Allies had improved out of all knowledge since the beginning of the war, and the U-boats had suffered a major defeat in the early summer of 1942 from which they never recovered. But the Germans had evolved certain improvements in their U-boats which were designed to reduce the effectiveness of our anti-U-boat weapons and tactics. These were coming into service by October 1944—in fact some of them had been in service for two or three months before. Some of these were even then giving the Allies an "operational headache," but it is only possible to assess their full potentialities in the light of information gained after the surrender of Germany.

The main U-boat developments fell under two headings—first, the device which made it unnecessary for a U-boat to spend hours on the surface while re-charging the electric batteries; and second, a much higher underwater speed in emergency. Both of these were revolutionary, and both were devised as counter measures to our anti-U-boat methods.

The first was the "schnorkel," which was no more than an extensible air intake and exhaust pipe which enabled the diesel engines to be worked and the submarine to be ventilated while submerged.

THE LIBERATION OF COPENHAGEN

British warships, which had been steaming for two days forcing a passage through German minefields in the Skaggerak and **Kattegat, reached** Copenhagen harbour after the surrender. This picture shows crowds packing the quayside to see the ships, the cruiser *Birmingham* in the foreground and destroyers beyond.

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GERMAN MINESWEEPERS IN BRITISH HANDS

The German island fortress surrendered to Rear-Admiral G. Muirhead-Gould, British Naval Commander North-West Germany. These German M class minesweepers steaming in formation are carrying Scots Guards to Heligoland for garrison duty.

The extent to which this principle was developed by the Germans is shown by the fact that their new 1600-ton U-boats were designed to remain at sea for five months without ever coming to the surface. When the U-boats surrendered, one of them—U-826—came to the surface after a nine weeks' patrol spent almost entirely submerged.

The second development gave the new U-boats underwater speeds of 16 knots and upwards—double what had hitherto been accepted as the maximum speed for a submerged submarine.

It is the effect of these developments upon our anti U-boat tactics with which we are here concerned.

The whole previous course of the war against the U-boats had been based upon driving them away from the coastal areas, the focal points of trade and the convoy routes. It was their need to spend several hours out of the twenty-four on the surface which had been exploited by us in achieving these results. The new "schnorkel" fitted U-boats could afford to operate in enclosed waters and close to the land because they did not have to come to the surface and thus give away their positions to surface patrols, air patrols, or to radar stations. Thus the U-boats gained an important strategic advantage, and to this was added a tactical advantage because the Asdic—the main method of hunting the submerged U-boat—is less effective in coastal waters where there are many rocks, wrecks, cross-currents, and "water noises."

The greater underwater speed of the U-boats had a parallel effect. The Asdic detectors of most of our surface ships lost a high proportion of their effectiveness if the ships were moving through the water at high speed. Moreover, attack on a submerged U-boat by Asdic involved two ships, one of which stopped and kept contact while the other dashed in to drop depth charges, and in so doing lost contact. By the later stages of the war the Germans were well aware of these tactics and of their limitations. Hence the production of the U-boat with the high underwater speed. This underwater speed, of an order revolutionary in submarine design, gave the U-boat a far better chance of escape and, moreover, gave it an underwater speed at which the Asdic of the average escort vessel would be greatly reduced in effectiveness, if not rendered entirely impotent.

These two developments in U-boat design gave the U-boats a tremendous advantage against the

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anti-submarine methods which had led to the defeat of the U-boats in the Atlantic in the summer of 1942. It is no exaggeration to say that they virtually eradicated the effectiveness of air patrols and greatly reduced the effectiveness of the Asdic.

Yet the new U-boats failed to produce results. It is against the background of these developments that our continued success in the Battle of the Atlantic must be considered. Our anti-U-boat forces were pitted against new developments carefully thought out and produced by the enemy to nullify or reduce the effectiveness of our counter measures; yet we maintained and increased our ascendancy in the war against the U-boats. It is against this background that the somewhat colourless statements issued by Downing Street and the White House must be considered.

The joint Anglo-American statement on U-boat warfare for the month of October has already been quoted. That for the following month stated that "Shipping losses from U-boat action have again been very small, and the number of U-boats sunk in proportion has again been satisfactory." The statement went on to make belated announcement of the "schnorkel" device and to give warning that new types of U-boats might at any time be thrown into the battle and "retention of our present command of the sea will undoubtedly call for unremitting vigilance and hard fighting."

The caution reflected in this official statement, which had fortunately been appreciated some time before by those waging war against the U-boats at sea, was amply justified. The official statement issued on January 9th, 1945, admitted that: "The German U-boat warfare flared into renewed activity during December 1944. This is but another index that the European war is far from over. Increased losses in Allied merchant craft have been officially recorded as result of the U-boats' spurt last month."

A month later the official statement admitted: "Throughout January the enemy's U-boat activity was slightly greater than in December, but losses of merchant ships were not substantially different."

This statement went on to say: "the U-boats, making use of their new devices, penetrated farther into focal areas of shipping close inshore." This was the first official admission that the U-boats had been fitted with a new device which gave them certain tactical advantages. It must not be thought that we were unaware of this "schnorkel" device before this statement was issued. Far from it: the "schnorkel" had been known to our experts for some time, but no reference could be made to it in a public

HELIGOLAND UNDER THE WHITE ENSIGN

A picture taken on the German island fortress showing Captain Roegeeler in the presence of the British Admiral and his staff signing the surrender document on a water tank which had been blown on to the quayside by R.A.F. bombs.

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ROYAL NAVY TAKES OVER AT KIEL

German prisoners leaving the destroyers which had brought them to Kiel after the British Navy had taken over the German naval port and dockyard.

and official statement until we knew that the Germans were aware that we were in possession of their secret.

Throughout the long series of official announcements regarding the war at sea one cannot but be struck by the fact that almost all of them contain a stern warning, not only to the effect that successes in any one period do not spell victory, but that new and effective methods might at any moment be expected from the enemy.

Even at the end of the first week in April 1945, the official statement on the progress of the U-boat war stated that the enemy's U-boat effort had increased. This, again, was due to the introduction by the Germans of a new type of U-boat. This was the small "Type 23" U-boat, of only about 200 tons. It was originally designed as an anti-invasion weapon, but had not been ready in time. By the early spring of 1945, however, boats of this type were operating on both sides of the North Sea, and particularly along the approaches to the convoy route to Antwerp. To the activities of the small U-boats of this type must be added the midget submarines, and particularly those of the "Seehund" type, which were operating in increasing numbers in the same area.

Thus there was, by the end of March 1945, definite indication that the centre of gravity of the war against the U-boats was shifting from the Atlantic to the North Sea. This was merely a measure of the enemy's urgency, and did not mean that the Battle of the Atlantic was ended. In fact, during April 1945 the Admiralty issued no less than four accounts of the sinking of U-boats in the Atlantic, whereas there had been no such announcements during the previous three months. That, be it noted, must not be taken to indicate that no U-boats had been sunk in the Atlantic during those months.

The first of the official announcements issued in April concerned a success gained by the Royal Canadian Navy frigate H.M.C.S. *Annan*, commanded by Lieutenant-Commander C. P. Balfry, D.S.C., R.C.N.R. This ship detected a submerged U-boat in the Atlantic and forced it to the surface by depth charge attack. As soon as the U-boat broke surface the frigate steamed straight at her at full speed, firing with every gun which could be brought to bear. The U-boat was hit time and again, and it was very soon obvious that she was completely disabled. Thereupon the Germans abandoned their vessel, which sank a few moments later. A number of the German crew were picked up by the *Annan* and made prisoners of war.

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After this success scored by a unit of the Royal Canadian Navy, the next announcement of the sinking of a U-boat was by a ship of the South African naval forces. This was H.M.S.A.S. *Natal*. On April 25th it was announced that this frigate had sunk a U-boat in the North Sea.

The last Admiralty announcement of the sinking of a U-boat in the North Atlantic was that issued on April 28th, 1945. This being the last announcement of an individual success, and therefore in some way historic, it is perhaps worth quoting it in full. It is, moreover, of peculiar interest because the U-boat was destroyed by the combined efforts of a yacht and two minesweepers—a combination of ships which had not hitherto been credited with any notable successes against U-boats.

The Admiralty *communiqué* reporting this success reads as follows:

"While on patrol in the North Atlantic recently H.M. Yacht *Evadne* (Lieutenant-Commander N. H. Richards, R.N.R.) detected a submerged U-boat. H.M. ship attacked with depth charges, and is believed to have severely damaged the enemy.

"Later, and in the vicinity of H.M.S. *Evadne*'s attack, H.M. Minesweepers *Recruit* (Commander A. E. Doran, D.S.C., R.N.) and *Pincher* (Lieutenant-Commander C. B. Blake, R.N.V.R.), who were escorting a convoy, encountered a U-boat on the surface. H.M. ships opened fire with all guns that would bear, both ships obtaining hits with their first salvo. A salvo from H.M.S. *Recruit* demolished the U-boat's gun, and both ships scored repeated hits with gunfire on the submarine's conning tower and superstructure.

"The enemy abandoned ship, and shortly afterwards the U-boat sank stern first. As the vessel disappeared heavy underwater explosions were heard. No attacks had been made by the U-boat on any ships of the convoy or escort forces. Survivors were picked up and made prisoners of war."

The German surrender was made early in May 1945. Yet, such was the complexity of the Battle of the Atlantic, and the anxiety regarding the possible actions of the U-boats at sea at the time of the surrender that it was not until June 7th that the final statement on the Battle of the Atlantic was issued

GERMAN U-BOAT CREWS GIVE UP

Another scene after the British Navy had taken over at Kiel. It shows U-boat crews lined up near the barracks to give their names and numbers to German personnel under the supervision of British naval officers.

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UNDER THE WHITE FLAG

The above shows two surrendered German E-boats sailing under the white flag entering Felixstowe harbour. They were escorted by ten British M.T.B.'s.

jointly by the British Prime Minister and the President of the United States. This statement, issued at 3.40 p.m. (British time) on that day, is historic in that it marks the official end of the Battle of the Atlantic, which had begun with the beginning of the war on September 3rd, 1939. Moreover, that statement gave, in brief, an appreciation of what we had been up against. That statement read :

"With the surrender of Germany the Battle of the Atlantic has ended ; German U-boats have ceased to operate and are now proceeding under Allied orders.

"Beginning in September 1939, it has been a long and relentless struggle ; a struggle demanding not only the utmost courage, daring and endurance, but also the highest scientific and technical skill.

"Germany's object was to cut the Allied sea communications, upon which the maintenance of the Allied war effort depended. This included the movements and supply of armies and air forces during successful campaigns in four continents.

"Losses have been heavy both in lives and materials ; at the peak in 1941 and 1942 the issue of the struggle hung in the balance. On the other hand over 700 U-boats have been sunk and many others have been destroyed by the Germans themselves in the final stage. Most of these successes have been achieved by the combined Allied naval and air forces working in the closest co-operation ; others are due to mines laid from aircraft and ships ; others to bombing in harbour, and a few U-boats were lost by marine dangers.

"But success was achieved. Thanks to the sailors and airmen, the scientists and technicians, the shipbuilders and the factory workers, the convoys reached their destination and enabled the soldiers and the airmen to fulfil their tasks.

"We, President and Prime Minister, in this our last joint statement on the U-boat war can now report that the Allies have finished the Job."

Every phrase of that statement is obviously a triumph of compression and under-statement. It should therefore be read only in conjunction with a statement which the British Admiralty was able to promulgate some time later. This was in the nature of a summary of the score-board of the Battle of the Atlantic in so far as it was waged by the Royal Navy, the Royal Canadian Navy, and other Dominion navies and European navies operating under British control. To these were, of course, coupled the air forces concerned.

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This document stated that in five years and eight months 75,000 merchant ships had been escorted in the Atlantic in 2,200 ocean convoys, the largest of which totalled 167 ships. All of these convoys were covered by naval escorts, and in addition over 1,250 of these convoys were also covered by our shore-based aircraft.

Throughout the whole campaign the total number of ships lost was 574—a grievous loss but one which pales before the realisation that this figure of loss amounted to only one ship in every 131 which set sail. The degree of protection afforded to the merchant ships in the Atlantic, and the great strain imposed upon our naval forces is demonstrated by the fact that there were days during the Battle of the Atlantic when there were 100 warships at sea protecting as many as 700 merchant ships. Merchant ships in the Atlantic sailed more than 200 million miles in convoy, while naval escort vessels made some 13,200 separate escort voyages of many days' duration in protecting these convoys.

The contribution of the air forces was also one which produced enormous figures of performance. Coastal Command of the Royal Air Force and the Royal Canadian Air Force flew no less than 43,800 "sorties" in convoy protection, while 76,500 "sorties" were flown on offensive anti-U boat patrols in the areas through which the U-boats had to pass on their way to and from their hunting areas. All this defensive and offensive work involved 850,000 flying hours. This, is, of course, without taking into consideration the contribution to the Battle of the Atlantic made by aircraft laying mines and carrying out other duties indirectly concerned with the all-important campaign on the ocean trade routes.

To appreciate the extent and scope of the Battle of the Atlantic it is necessary to appreciate the commitments of its two off-shots—the convoys to North Russia and the British coastal convoys. The North Russian convoys involved the escorting over long voyages under the worst possible conditions

THE ADMIRAL'S ARRIVAL

On board one of the E-boats at Felixstowe was Rear-Admiral Bruening, who had been in charge of E-boat operation and came to sign the instrument of surrender. Here he is seen saluting as he was piped ashore.

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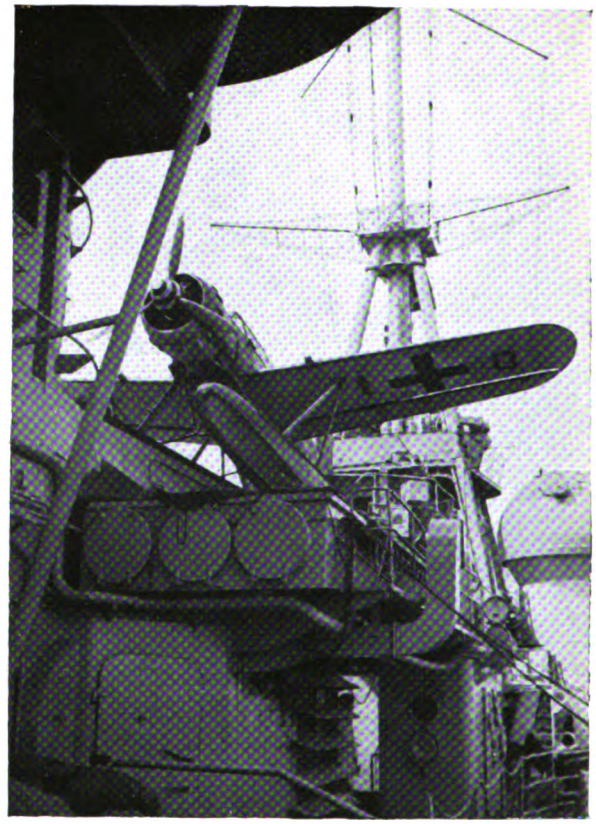
Next day General Jodl arrived at Rheims, and after some discussion of details, the surrender was duly signed by him and Admiral Friedeberg. This, however, was only surrender to the British and American forces under General Eisenhower. The final surrender to the Allies, including the Russians, took place in Berlin when Wednesday, May 9th, was only a few minutes old.

Thus ended the western component of the Second World War, but there remained for the Royal Navy a host of tasks and anxieties connected with the war against Germany. German naval installations had to be taken over, the German navy disbanded, the minefields plotted, secret enemy information obtained, ships immobilised, and defences destroyed. Moreover, when Germany collapsed it was known that there were a large number of U-boats at sea, although their positions and areas were not at that time known to the Allies. One of the first steps taken by the Allies was to arrange for the German High Command to broadcast orders to all U-boats at sea to come to the surface, hoist a large black flag, and make their way to certain ports to surrender.



SURRENDERED GERMAN CRUISER

The *Prinz Eugen*, a 10,000-ton cruiser of the "Hipper" class, lying in the harbour at Copenhagen, showing one of her seaplanes.

Would all the U-boats obey these orders? Were there not at sea a certain number of U-boats whose officers and men were sufficiently hot-headed and fanatical to try to carry on the war or to try to reach either Japan or some lonely bay in a sparsely inhabited part of the world? Nobody knew the answers to these questions, but there were many who remembered that a U-boat manned by a picked crew of officers had put to sea just before Germany asked for an armistice in 1918 with the avowed intention of selling their lives dearly by sinking as many ships as possible. Precautions could in no way be relaxed, but with U-boats coming to the surface to surrender it was clearly impossible to continue the "shoot first and investigate afterwards" tactics which had for so long characterised the actions of both ships and aircraft in the struggle against the U-boats.

Fortunately, however, the German habit of giving unquestioning obedience to all orders proved too strong for any fanatics that still remained in the U-boat crews. The U-boats duly came to the surface and surrendered—some of them as far from home as the waters off the South American coast and in the Pacific north-east of Australia. Nor can it be said that their crews were offensive, truculent, or "difficult." In fact, most British officers were surprised at their readiness to co-operate and to obey our orders.

Most of the U-boats which surrendered in the eastern part of the North Atlantic were directed to go to Loch Eriboll, in the north of Scotland close to Cape Wrath, to Loch Alsh, on the Scottish west coast inside the Isle of Skye, or to Portland, on the English Channel coast. When the U-boats had been collected at these ports they were sailed to assembly bases. In the first place most of them went to Loch Alsh, where they came under the administration of Captain B. C. Gourlay, R.N., the Naval Officer in charge at that port. After some experience with these U-boat crews Captain Gourlay said to an Admiralty representative: "I am perfectly satisfied with the complete readiness of the U-boat crews to avoid giving any trouble and to comply with all instructions given them—apart from one U-boat crew which was slightly offensive at first. There have been no incidents since the first arrivals."

As a side-light upon the mentality of the German sailor in surrender one may record the author's personal experience some weeks later when on board the first of the German Narvik class destroyers to sail through the Kiel Canal from Kiel to Wilhelmshaven, where the surface ships of the German navy were collected after the surrender.

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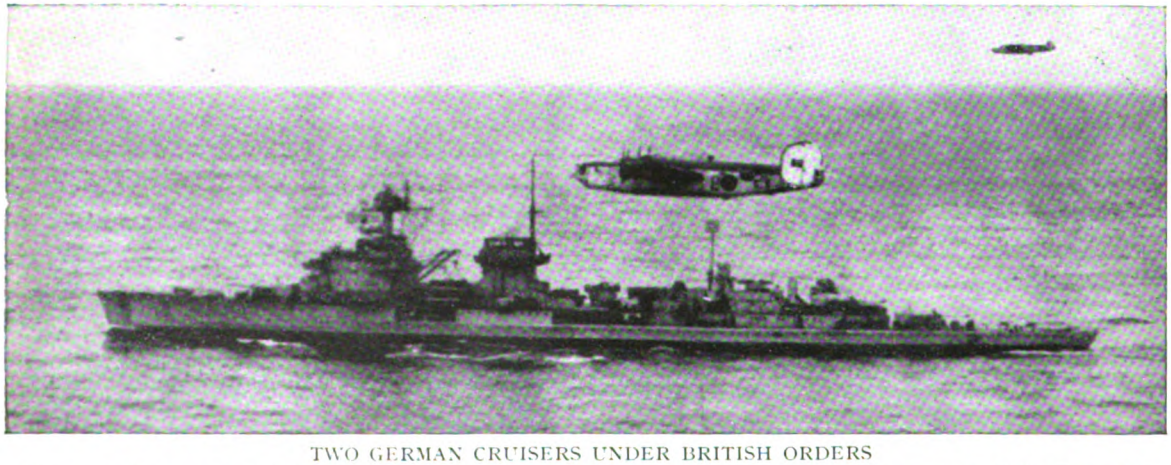

TWO GERMAN CRUISERS UNDER BRITISH ORDERS

Acting as "air sentries," Liberators of R.A.F. Coastal Command flew alongside the German cruisers *Prinz Eugen* and *Nurnberg* while they were on their way from Copenhagen to Wilhelmshaven under the terms of surrender. Top picture shows the *Prinz Eugen* during its journey; lower picture is of the *Nurnberg*; and the centre picture, taken aboard the *Prinz Eugen*, shows German naval officers lined up to receive their orders.

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THE GERMAN FLEET AT KIEL

This photograph, one of a series taken at Kiel of the various surrendered German warships, shows some of the destroyers anchored at the famous naval base.

This big German destroyer sailed through the Kiel Canal with her German crew, but with a British armed guard of naval officers and Royal Marines on board. At her masthead floated the White Ensign, with the German naval ensign flying ignominiously beneath it. In such circumstances one would have expected the Germans to be downcast and ashamed, for they were parading their defeat through an area of Schleswig-Holstein from which many of them were drawn. Yet the very reverse was the case. Instead of averted eyes on the canal banks and surly looks on board, the passage of that ship through the canal was like a triumphal progress. At the towns and villages on the banks there were cheering crowds, who were exhorted to more frenzied shouting and waving by the sallies of the men on board. Nowhere was there any sign of the bitterness of defeat. And when that destroyer arrived at Brunsbuttel, at the western end of the canal, and went alongside another surrendered German destroyer of the same class, the crews of the two ships greeted one another with smiling faces and slaps on the back and many handshakes. It was as if they had won a great victory, rather than achieved utter defeat. Moreover, during that short voyage the navigating officer and one petty officer of the German destroyer actually put forward requests that they might be told how they could join the Royal Navy!

It seems incredible, but it is true. Perhaps this incident, and the readiness of the great majority of the U-boat crews to obey with alacrity any orders that were given them, had their genesis in the fact that the Germans were for centuries the mercenaries of Europe, always fighting, never because of patriotism, but serving generals and princes for the sheer love of war. A jingoistic patriotism has, in fact, been grafted on to the German warlike mentality only in comparatively recent years.

In mid-May eight of the surrendered U-boats were sailed from Loch Alsh to Lissahally, on the shores of Loch Foyle, in Northern Ireland. There was something symbolic in their progress and in their reception close to Londonderry, which had played so important a part in the Battle of the Atlantic.

These eight U-boats were escorted on this voyage—during which they were navigated by their own crews with British armed guards on board—by the surface vessels representing four navies of the United Nations which had been intimately concerned in the Battle of the Atlantic, while aircraft of Coastal Command of the Royal Air Force circled overhead.

This strange and historic convoy was led by the destroyer H.M.S. *Hesperus*, which had herself accounted

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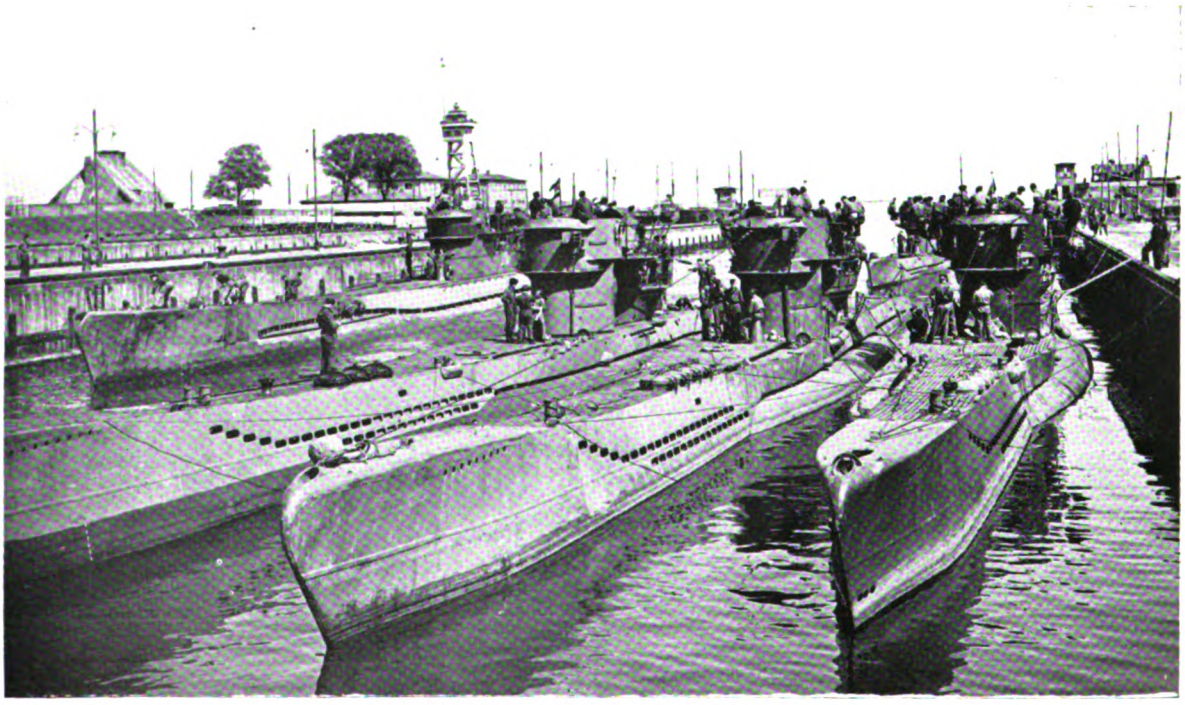
for more than one U-boat in action. She was commanded by Commander R. A. Currie, D.S.C., R.N., the Senior Officer of the famous Fourteenth Escort Group. H.M.S. *Hesperus* was followed by the corvette H.M.S. *Berkeley Castle*, commanded by Commander N. W. Duck, D.S.C., R.N.R., the Senior Officer of the Thirty-first Escort Group. Four U-boats followed, in single line ahead. Then came the American destroyer U.S.S. *Robert I. Paine* of the Thirty-second Escort Group, commanded by Lieutenant-Commander Drayton Cochran, U.S.N.R., followed by four more U-boats. On either wing the U-boats were escorted by the Royal Canadian Navy frigate *Thetford Mines*, H.M.S. *Havelock*, H.M.S. *Bentley*, H.M.S. *Keats*, and the Fighting French corvette *Commandant Drogou*.

As the U-boats turned into Loch Foyle and passed Culmore Point the crowd which had gathered there to witness their arrival broke spontaneously into the strains of "Rule Britannia." Waiting, silent and impassive, on the jetty as the U-boats berthed alongside was Admiral Sir Max Horton, K.C.B., D.S.O., the submarine pioneer who, as Commander-in-Chief of the Western Approaches, had played the major part in winning the Battle of the Atlantic and in bringing the U-boats to their ultimate surrender. It was typical that there was no triumphant ceremony, the only demonstration being by the civilians massed at Culmore Point. The officers and men of the Royal Navy were quiet, reserved, and very stern and correct in their bearing to a beaten enemy.

The final disposal of the U-boats was not to come until many months later, when, in early December 1945, destroyers, escort vessels and tugs began the long and wearisome business of scuttling the U-boats in deep water—an operation which occupied many weeks of arduous work and was given by the Admiralty the code-name of "Operation Deadlight."

It is doubtful whether anybody outside the crews of the ships concerned realised the prolonged strain involved in "Operation Deadlight"—a strain which was the heavier because it fell for the most part upon the crews of ships which had borne the brunt of the Battle of the Atlantic. The U-boats, assembled in Loch Ryan and at Lissahally, amounted to 110, after the allocation of ten each to Britain, the United States, and Russia had been made. All these 110 U-boats had to be fitted with towing gear and demolition charges. Then, some eight at a time, they had to be towed out to the scuttling area. They had to be towed as derelicts—that is without any crews on board, for it was appreciated that the weather in the scuttling area at that time of year would almost certainly preclude the transfer of crews. Moreover,



THE END OF THE WOLF-PACKS

A sidelight of the great German debacle—U-boats in a lock at Wilhelmshaven before entering the harbour to surrender

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Specially drawn

U.S. CARRIER-BORNE AIRCRAFT STRIKES A

An action which proved to be one of the chief turning-points of the war in the Far East. American carrier-planes inflicting a crippling blow on the Japanese Navy on Saturday, April 7th, 1945, about 50 miles from Japan. After scout planes had early in the morning reported a Japanese fleet in the East China Sea a U.S. carrier task force under Vice-Admiral Mitscher steamed forward at great speed and by midday its planes were striking their target. From all directions they attacked and in less than three hours the battle was

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by MONTAGUE B. BLACK, F.R.S.A.

CRIPPLING BLOW AT THE JAPANESE NAVY

over, the Japanese losses apart from hundreds of planes, including one cruiser, one light cruiser and three destroyers, as well as their biggest remaining battleship, the 45,000-ton *Yamato*. The American losses were comparatively light. The *Yamato* was hit by several heavy bombs and at least three torpedoes; and here our artist, Montague B. Black, gives an impression of the awe-inspiring scene as the battle reached its climax and the mighty battleship sank "like a volcano erupting", as one of the U.S. airmen described it.

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MIGHT OF THE ROYAL NAVY

A British battleship firing in support of the Army —a scene typical of the all-controlling powers of the Royal Navy.

the scuttling area was far distant from the main U-boat assembly base at Loch Ryan. The Ministry of Agriculture and Fisheries had stipulated that the U-boats must be sunk in a minimum of 500 fathoms of water. Water of this depth could not be reached by the direct route with U-boats in tow, for a deep anti U-boat minefield intervened. While surface ships could cross this with impunity, the towing hawsers would sag down below the depths at which the mines had been laid. Thus the U-boats on their last voyage had to be towed a distance of nearly two hundred miles from Loch Ryan—and this at a speed of four to five knots in north Atlantic winter weather.

On arrival in the scuttling area there were three methods of disposing of the U-boats. The first was to send on board the U-boat an officer to ignite the eleven-minute time fuse attached to the demolition charges. This, of course, was presupposing that the north Atlantic in mid-winter would behave like the Mediterranean in mid-summer. The second method involved a destroyer picking up with a grapnel a long trailing lead from the U-boat, which was supported on a series of small fishermens' floats. In practice this method could seldom be used because the trailing lead and the floats had been carried away by the seas. So, in default of bombing and torpedo bombing which was used experimentally once or twice, the U-boats had to be sunk by gunfire—unless they had sunk in tow, as many of them did.

There is another point worth noting in this final disposal of more than a hundred of Germany's U-boats. That is, that the scuttling area chosen, some eighty miles to the north-west of Bloody Foreland, at the north-west corner of Ireland, was comparatively close to the position in which a U-boat had torpedoed the liner S.S. *Athenia* within a few hours of the outbreak of war, and thus began the Battle of the Atlantic.

From the very moment of Germany's surrender Admiral Sir Harold Burrough, K.C.B., K.B.E., D.S.O., the Allied Naval Commander-in-Chief, had to set in motion a series of movements which had long been prepared.

As soon as it was thought that Germany might collapse suddenly, plans had been laid for the seizure and occupation with the least possible delay of the major ports and strongholds of the German navy. This did not apply only to such obvious places as Kiel, Wilhelmshaven, Flensberg, and so on, but also to little-known places which we knew from our intelligence reports were centres of German naval training or naval production in one form or another.

The essence of such a scheme lay in the speed at which the parties of British officers and men who were to take over control could reach their destinations, for there was no knowing what valuable gear or records the Germans might not destroy if they were given any respite. The requirement of speed ruled out the possibility of sending these parties by sea, because of the time which would necessarily be taken in sweeping the mines from the approaches to the various ports.

Thus Admiral Sir Harold Burrough had organised and ready to move at the shortest notice a large number of "Naval Parties," each one fully armed and provided with its own methods of communication as well as its own means of road transport.

All these "Naval Parties" went forward in accordance with previous orders on the word "go." Their orders, however, could not be in any detail, and they moved almost entirely upon the initiative of the officer in charge. Sometimes he could collect from the military authorities some information about the state of the roads, the position of road blocks, and which bridges remained intact. Often he had to lead his party "by guess and by God" through territory which had not yet been fully occupied and which

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LATEST E-BOATS ARRIVE AT PORTSMOUTH

The first three of the latest type of German E-boat, with engines of 75,000 h.p., to arrive in Britain, came to Portsmouth from Den Helder in Holland, escorted by five British M.T.B.'s. Each had a German crew of one officer and nine men. The top picture shows an E-boat approaching Portsmouth with escort; the centre picture shows them docking; and the lower picture shows the crews coming ashore under escort.

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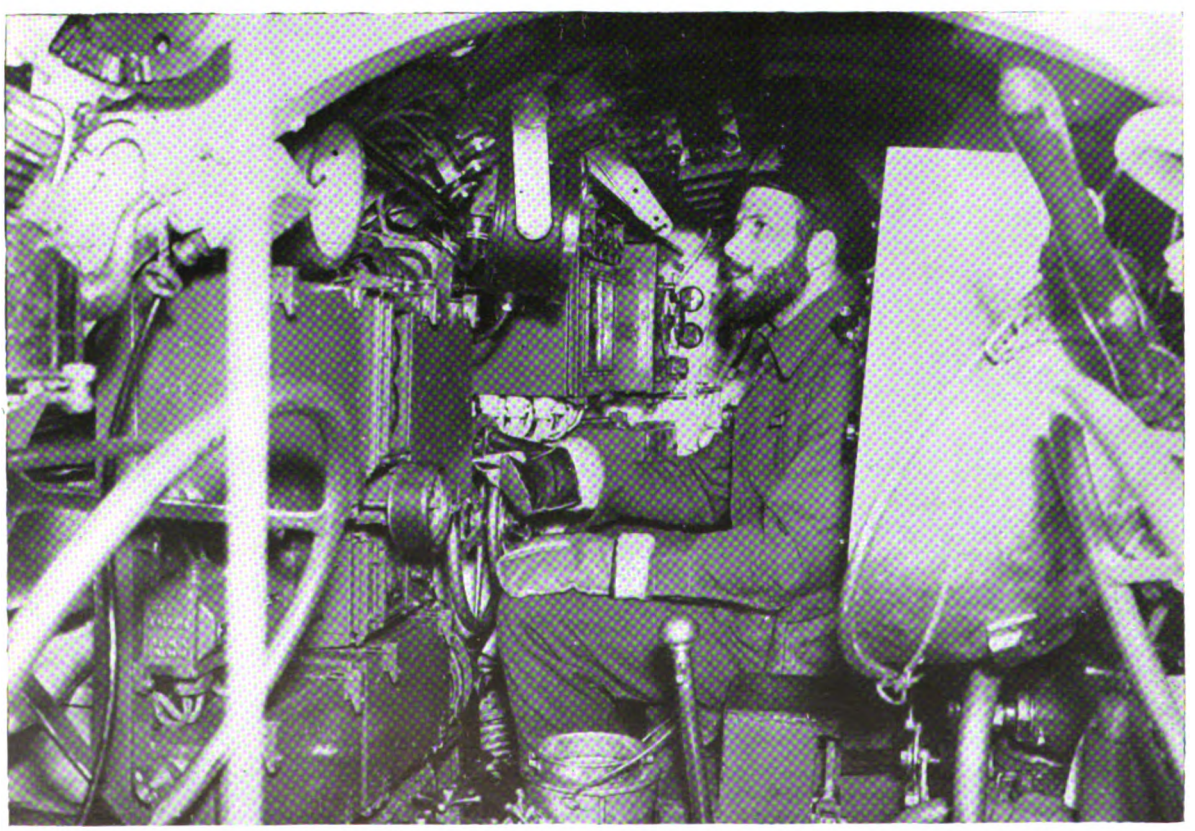
contained large numbers of German troops which had not been rounded up or disarmed, and where no information was available about road blocks, blown bridges, or minefields.

Faced with this unique and dangerous task, the "Naval Parties" acted strictly in accordance with the orders, which stated that they must reach their several objectives "with the utmost despatch." Often they outstripped the Allied armies. A notable example was the Naval Party consigned to Kiel, the "cradle of the German navy" and the equivalent of our Portsmouth. This party, under the command of Admiral Baillie-Grohman, arrived in Kiel an appreciable time before the Germans in that area of Schleswig-Holstein had been disarmed. Yet the White Ensign was hoisted with full honours by this little group of British naval officers and men, with the high-ranking German naval officers paying due respect to the ceremony.

It was in most cases several days, and in some cases weeks, before swept channels through the minefields could be established and British warships could appear at these German ports as "guard-ships." In the meantime, the whole duty of establishing order and bringing home to the German navy the fact that they were a defeated nation devolved upon these naval parties. They were not isolated in the sense that they were from the outset in wireless telegraphy touch with other formations of all Services, but they were in a sense isolated by reason of the distances involved and the uncertain state of the roads, and the almost total absence, in the early days of the occupation, of telephones, railways, or usable airfields.

Nor were the tasks imposed upon these Naval Parties by any means confined to the ports and the coastal areas. Under the Allied Naval Commander-in-Chief there was a Flag Officer commanding in the Schleswig-Holstein area and another Flag Officer commanding Western Germany, with headquarters in the Wilhelmshaven area. Under these officers there was a Naval Officer-in-Charge at each of the ports. This did not mean that the officer concerned was in charge only of the port, its approaches and activities. Each port was the naval headquarters of an area which stretched more than a hundred miles inland—down, in fact, to the line of demarcation between the British and American zones of occupation.



MIDGET SUBMARINE

One of a series of photographs showing Sub-Lieutenant K. Robinson at the hydroplane controls of a midget submarine.

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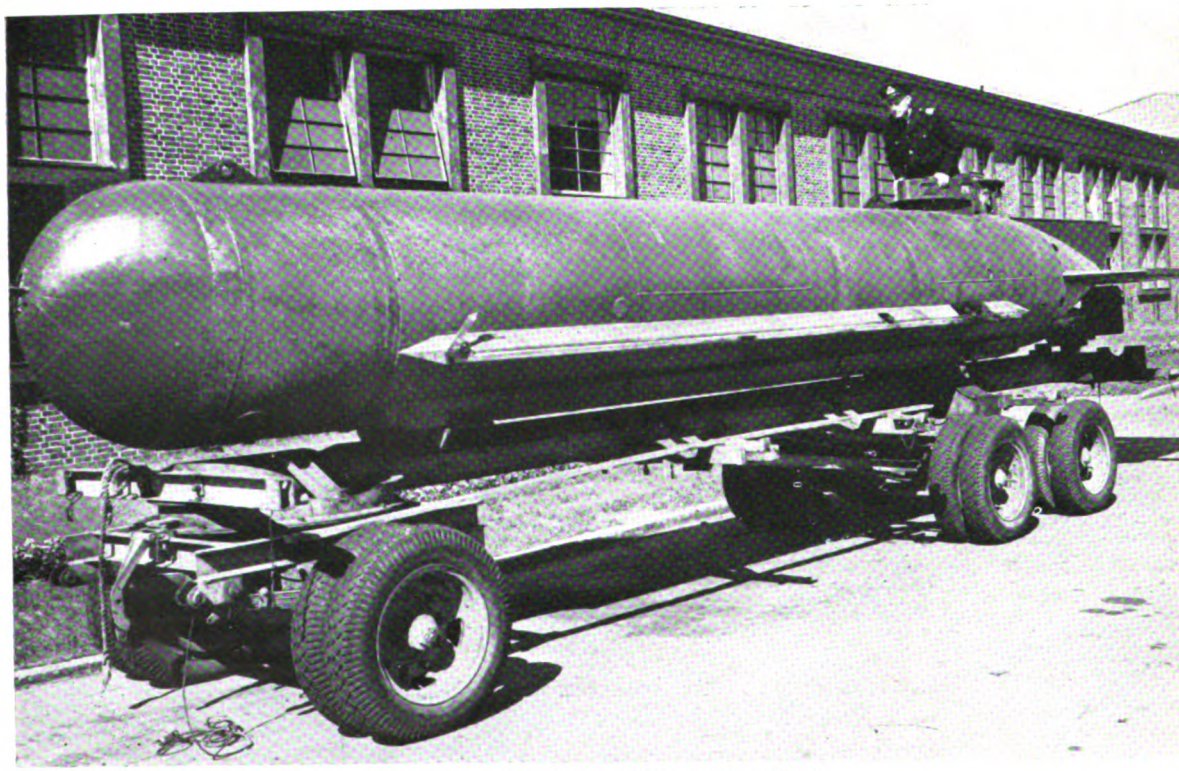
THE DESTROYERS PASS THROUGH

On the bridge of H.M.S. *Zealous* as H.M.S. *Zodiac* waits ahead at the first lock gates at Kiel.

SEEING FOR THEMSELVES

Two officers of the Royal Marines with the British Navy at Kiel, inspecting a German 105-mm. flak gun.



READY FOR ITS JOURNEY UNDERSEAS

A picture taken by a Royal Navy photographer touring Kiel and district. It shows the inspection of a Molch one-man U-boat at a factory where this type of submarine was assembled.

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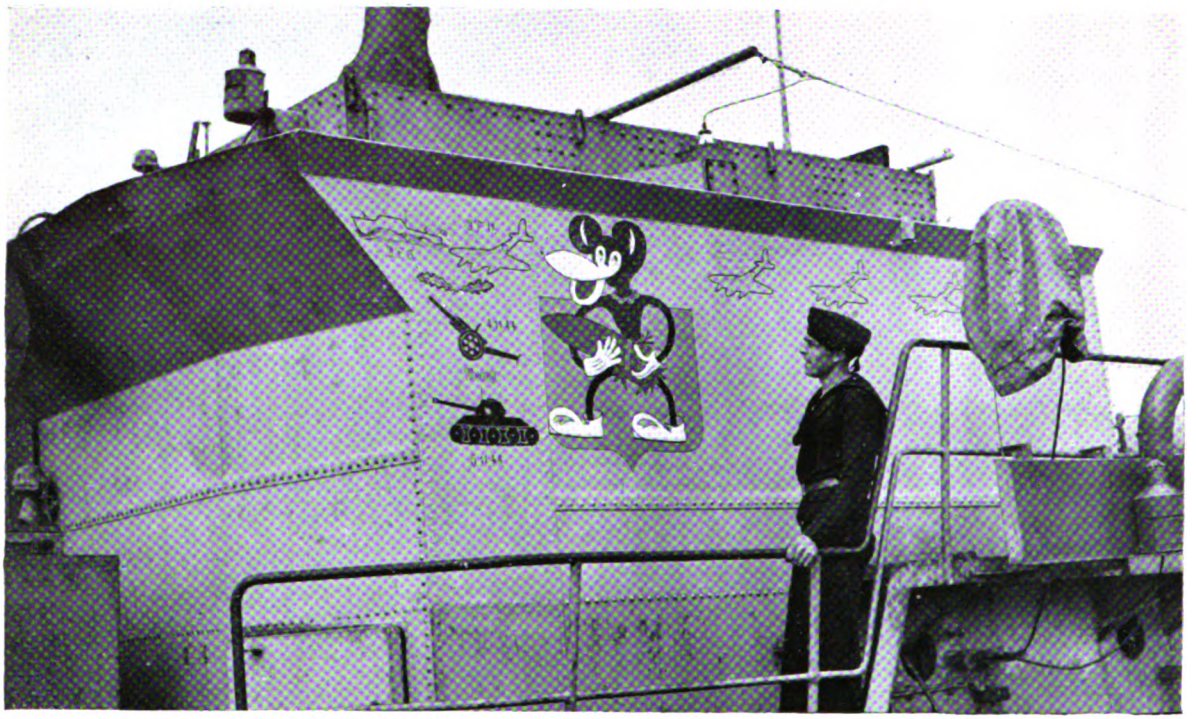

EXAMINING AN ENEMY SHIP'S SCORE-BOARD

A Dutch sailor examining the score-board of a German flak-ship in Rotterdam Harbour. The enemy here claimed four planes, one M.T.B., one gun, and one tank. The German-style Mickey Mouse was the ship's mascot.

It may seem at first sight that there can be little of naval importance or interest so far inland, but it must be remembered that western Germany is a network of inland waterways, most of which are capable of taking vessels of considerable size. Moreover, it was found that the German system of dispersal of stores and spare parts resorted to as a result of the Allied bombing offensive was so extensive that it was the exception rather than the rule to find the barns and outbuildings of an inland farm which did not contain gun-mountings, spare gun barrels, ammunition, or other forms of naval spare parts or stores of one kind or another. All these had to be hunted down, listed, and subsequently removed and destroyed. In the course of all this work the young officers and ratings of the Naval Parties must have travelled millions of miles along roads where the unexpected might have happened at any moment.

CHAPTER IX

WHILE the war in Europe was drawing towards its end, the war against Japan was being continually and progressively intensified both by the British Empire and by the United States of America.

The war in the Far East can conveniently be divided into two parts, just as the Far East is geographically divided into two parts by the long spine of the Malay Peninsula and the land formations stretching southward through the East Indian islands to Australia. To the east of this division the war against Japan was, from the naval point of view, still a predominantly American commitment in the late autumn of 1944, although units of the Royal Australian Navy and the Royal New Zealand Navy had been actively participating for a long time. Moreover, the British and American navies were working together in a close co-operation which was designed to make the best use of the available ships in the best places, irrespective of their nationality. Thus, when the German battleship *Tirpitz* was lurking in a fiord in northern Norway and it was felt that an additional aircraft-carrier was necessary to the British Home Fleet, the need was met by the American aircraft-carrier *Ranger*. Similarly, when the United States Navy was short of an aircraft-carrier in the Pacific, the need was filled by H.M.S. *Victorious*, which had operated with a United States naval Task Force for nearly six months.

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The part which the Royal Navy was to play in the war in the Pacific was already planned. It was to be an ever-increasing part, with ships being sent out to form and to strengthen the British Pacific Fleet at the earliest moment that they could be spared from operations in other theatres of war. In fact, great as was the contribution of the Royal Navy in the Pacific to the victory over Japan, the enemy surrendered before the full weight of the planned British naval offensives in that area could be developed.

The war against the Japanese in the Indian Ocean was, however, a British responsibility and, although it is convenient to deal separately with the two sectors of the Far Eastern war, it must be borne in mind that, although separated by thousands of miles, they were closely related to one another, and frequently operations in one area were undertaken at the express request of the High Command in the other area. A case in point was the highly successful attacks upon Japanese oil installations in the Dutch East Indies in February 1945. These were carried out by British aircraft-carriers under the command of Rear-Admiral Sir Philip Vian. This force was on its way to reinforce the British Pacific Fleet under Admiral Sir Bruce Fraser—which worked under the operational control of Admiral Chester Nimitz of the United States Navy, the Supreme Allied Commander in that theatre of war. The operations carried out by Rear-Admiral Vian's force in the East Indies theatre of war were undertaken at the instigation of Admiral Nimitz, who felt that the objective fully justified some delay in the arrival of Rear-Admiral Vian's force in the Pacific.

Towards the end of the year 1944 it seemed that the Allied strategy which was developing was taking the form of a giant pincer movement designed to pinch off the whole of Japan's southern conquests at some point at or near the narrow Isthmus of Kra, which forms the neck of the Malay Peninsula. General MacArthur's forces had struck against the Philippines, having successfully made the long overseas stride from the Admiralty Islands—a distance of well over 1,200 miles. In the Indian Ocean the British East Indies Fleet had struck hard at the Japanese naval base at Sabang, at the extreme north-western end of Sumatra, and at the Japanese bases in the Nicobars and the Andamans—the groups of islands

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There was, in fact, no major operation against the Kra Isthmus. Events developed in such a way that it proved unnecessary. One cannot doubt, however, that such an operation would have been undertaken had matters gone differently elsewhere—and notably with the campaign of the Fourteenth Army in Burma.

It does not in any way detract from the great endurance and high achievement of that army to say that the Royal Navy played a great part in making the success possible and in exploiting it to the full. Much of the southward advance of our army was, in fact, a series of small but important and successful combined operations. Along a coast with many off-lying islands, with many swamps and river mouths, and with lateral land communications along the coastal area conspicuous chiefly by their absence, both advance and supply was a matter for combined operations. Inland on the rivers, too, seamen in landing craft, launches and boats of all kinds gave the soldiers much invaluable help. In these many tasks the personnel of the Royal Indian Navy played a most gallant and important part.

But the naval contribution to the success of the Burma campaign stretched far away from the coast of Burma itself. We have seen that ships and aircraft of the British East Indies Fleet had been battering the Japanese bases at Sabang and in the Nicobars and the Andaman Islands. These Japanese-held bases not only controlled, by their strategic position, the approaches to the narrow neck of the Malay Peninsula, but they also controlled the south-to-north sea route from Singapore to Rangoon—the only possible route by which considerable supplies or reinforcements could reach the Japanese armies in Burma. Thus the sea strategy of the British East Indies Fleet was directly keyed to the needs of the land campaign in Burma.

It was obvious that, so long as the Japanese bases "covering" the Singapore-Rangoon trade route remained capable of operating aircraft and light torpedo craft and submarines, unjustifiable risks would be incurred if surface ships were directed to operate in the Malacca Straits, the Gulf of Martaban, or the waters between them. It was also recognised that, with the weight of forces available, the string of

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OFFICERS OF THE SILENT SERVICE

Not without good reason has the Senior Service been also called the Silent Service, and little is normally heard about either the officers and men who serve in the ships, or of those who, on land, control the movements of those ships. The picture above is a rare glimpse behind the scenes, and shows officers planning the routes of ships in the Plotting Room of the Admiralty. The top picture is of four officers of a midget submarine which sank a floating dock in Bergen Harbour.

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Japanese bases stretching northwards from Sabang through the Nicobars and the Andaman Islands could not be finally reduced in a single operation; the task would be one of attrition, calling for sustained operations over a fairly long period.

In the meantime, however, there was much that the Royal Navy could do by operating submarines against the Japanese shipping on the Singapore-Rangoon route which was the life line of the Japanese army in Burma. By the autumn of 1944 the number of British submarines operating with the East Indies Fleet had already been greatly increased, and further strong reinforcements were on their way.

This intensified submarine campaign was difficult to carry out and it imposed considerable strain upon the submarine crews. Not only were they called upon to operate in areas more than a thousand miles from their base—a fact which meant very long patrols—but they were now working in the tropics, whereas the previous experience of most of the officers and men had been gained in the Arctic, the North Sea, the Atlantic, or the Mediterranean.

Yet the British submarines achieved successes so great that future historians may well conclude that their part was a vital contribution to the victorious issue of the Burma campaign. On November 11th, 1944 the Admiralty announced that British submarines operating in Far Eastern waters had sunk forty-five enemy vessels. Four days later, on November 15th, the Admiralty announced that our submarines had achieved the destruction of a further twenty-four enemy ships in the war against Japan. That was a total of 69 Japanese vessels, or vessels serving the Japanese, announced within five days. That does not mean that all these vessels were actually destroyed during that period, but they had certainly been accounted for in a period of two or three weeks. Most of the vessels destroyed were, of course, small craft, but these small craft were of immense importance to the Japanese, for it was upon them that the enemy had very largely to rely for his coastal traffic, for the commitments of his overseas conquests and the rapid and increasing attrition of his merchant fleet made it impossible for him to allocate more than a very few large, or even medium sized ships, to the war on the western side of the Malay Peninsula.

REFUELLING A CRUISER AT SEA

The refuelling of warships at sea has been considerably simplified, the process being undertaken while the tanker and the vessel being refuelled proceed on their course. In the photograph a rating is seen holding a marked line which enables the navigator on the bridge to keep a true course.

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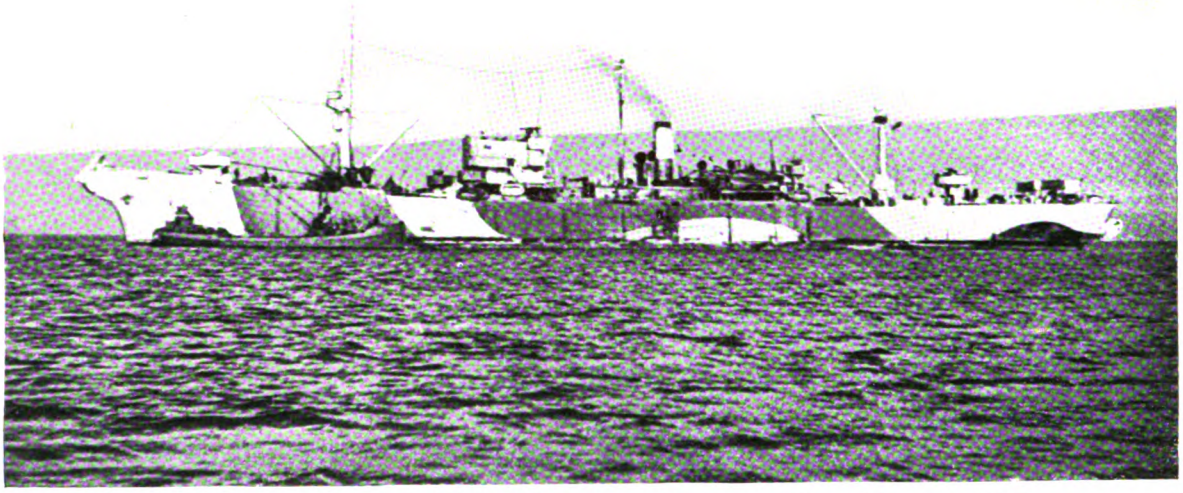

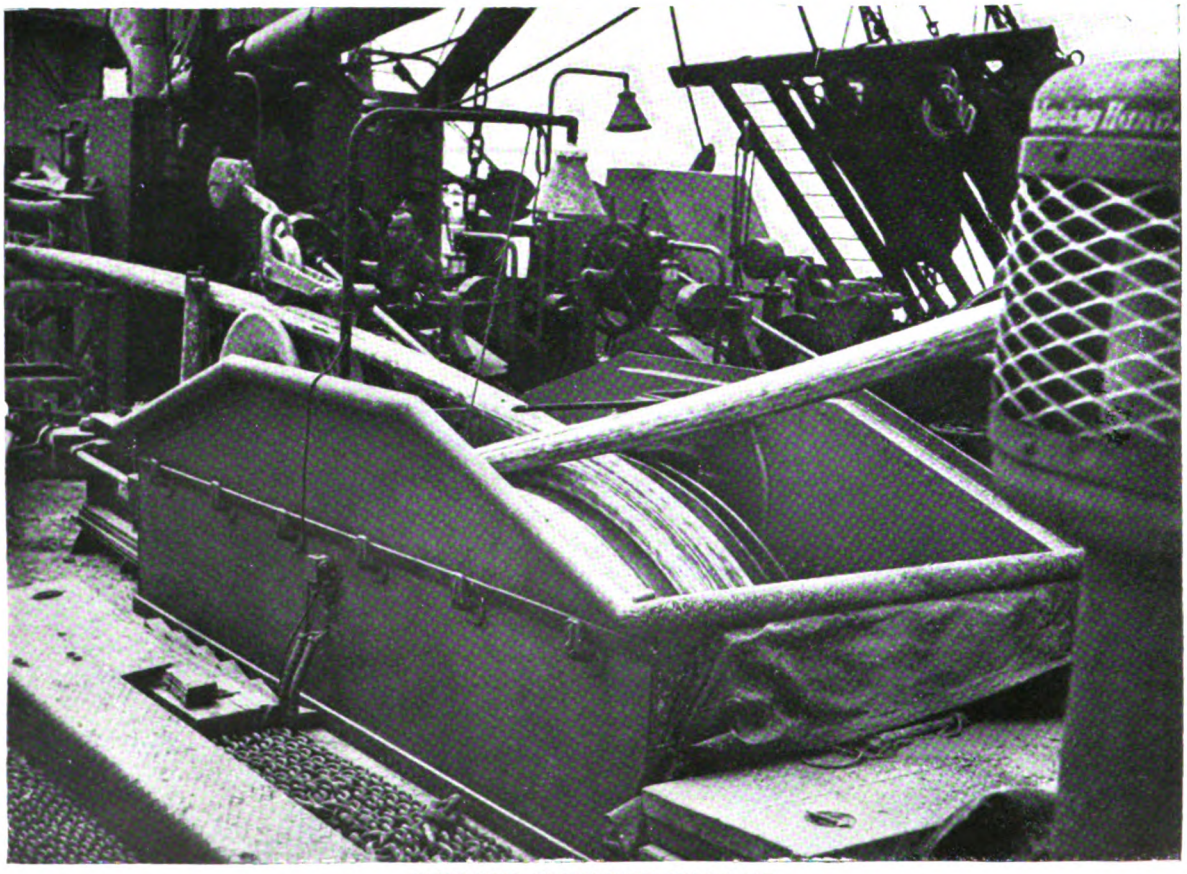

HOW THE FIRST PIPE WAS LAID

One of the great supply problems of the war was solved by PLUTO (Pipe Line Under The Ocean). By this unique method an oil pipe-line was laid under the English Channel, and played an invaluable part in supplying our highly-mechanised armies. These photographs show how the system, devised by the Petroleum Warfare Department, was brought into operation. Top, H.M.S. *Latimer* arrives near the English shore after laying the first cross-Channel pipe-line in history ; bottom, the Hais cable passing round the drum on H.M.S. *Latimer* for controlling the speed of laying and shows the flexibility of the cable.

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The small size of most of the ships used by the Japanese on the Burma route greatly increased the difficulties and dangers under which our submarines had to operate. Not only were the enemy vessels of such shallow draught that they very often could not be attacked by torpedo, while they presented small targets to a gun, but they were able to creep along close inshore where they were hard to see and where the water was so shallow that it greatly added to the navigational hazards which had to be accepted by the submarine in order to carry out a successful attack.

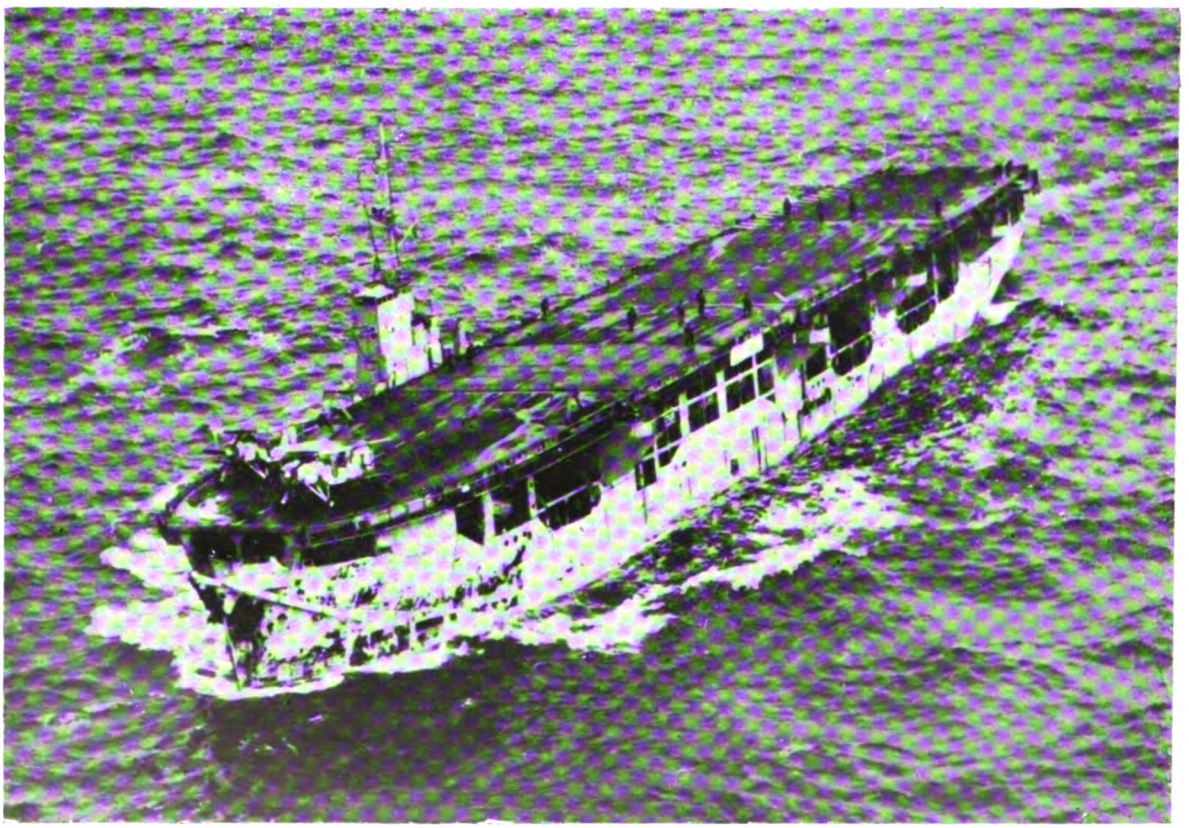
The account given by Lieutenant-Commander E. P. Young, D.S.O., D.S.C., R.N.V.R., commanding H.M. submarine *Storm*, is eloquent of the way in which our submarines were, when occasion demanded it, fought almost as if they had been motor gunboats.

H.M. submarine *Storm* was patrolling in coastal waters off southern Burma when a Japanese convoy was intercepted. In a surface action lasting thirty-six minutes—during most of which time the submarine was in imminent danger of running aground in the shoal water—she took on seven Japanese ships and two escorts. Of these H.M.S. *Storm* sank both the escorts and one of the coasters. Two other coasters were hit and damaged, and a motor torpedo boat which tried to interfere was also hit and severely damaged. Here is Lieutenant-Commander Young's own account of that hectic action:

"We surfaced and opened fire at the rear ship of the convoy at a range of 2,000 yards, obtaining eight fairly destructive hits. She turned away and limped towards the shore. We then attacked and stopped the ship ahead of her, but both the escorts were now racing towards us, firing their machine guns. I turned to port to bring them both on to the starboard bow, and directed the fire of all our guns on to them. In turn they were both hit and stopped by several direct hits from the 3-inch gun.

"This part of the action was most exciting, the range eventually closing to 400 yards.

"Both of these escorts were carrying Japanese, presumably troops. One of them released a depth



MERCHANT AIRCRAFT-CARRIER

During the most critical phase of the Battle of the Atlantic a number of British merchant ships were equipped with flight decks for defensive aircraft, thus combining the functions of merchantmen and escort-carriers. This picture shows the merchant aircraft-carrier *Ancylus*.

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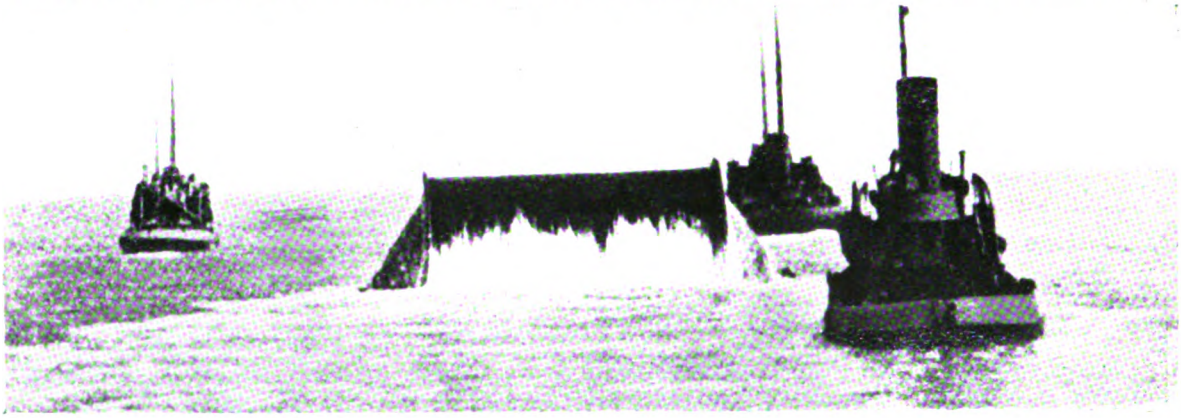

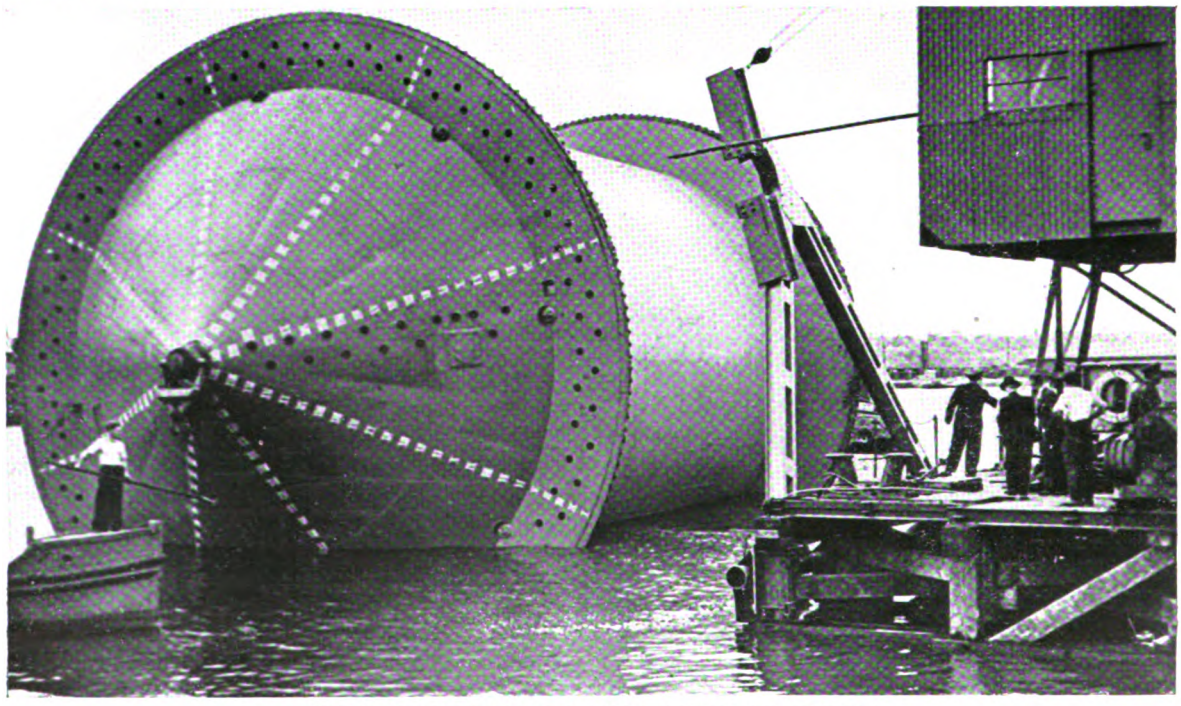

HOW THE LIBERATING ARMIES GOT THEIR PETROL

PLUTO was able to supply more than a million gallons of petrol a day direct to our armies on the Continent. It proved a great factor in their all-conquering progress. These photographs throw sidelights on operation PLUTO, one of the greatest supply devices of all time. Top, one of the pipe-lines running out to sea; centre, a Conum (H.M.S. *Conundrum*), or drum carrying steel pipe, being towed across the Channel and laying the first continuous length of pipe, 67 miles long; bottom, a Conum being moved into position to receive the steel pipe.

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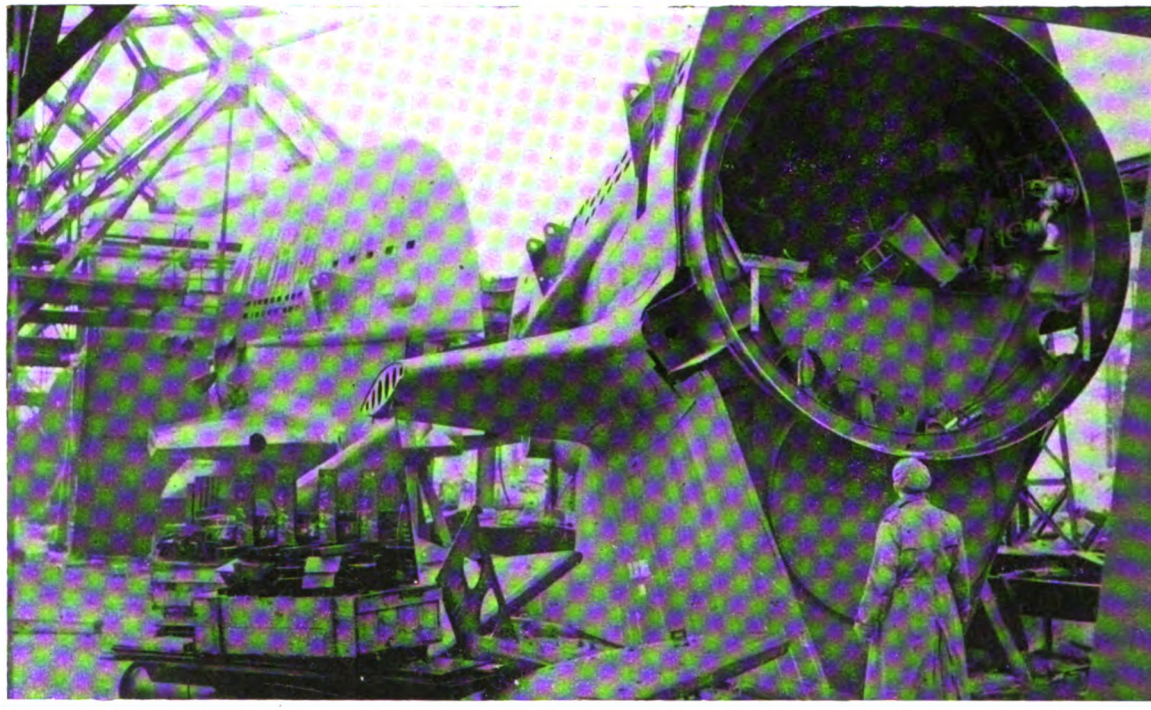
charge when it was 500 yards away, which rocked the submarine. Then one of the escorts got out of control, and eventually drove herself under. The other was finished off later.

"Meanwhile a motor torpedo boat was sighted coming for us at great speed, so this was the next target to be engaged. She fired two stern torpedoes, the tracks of which passed about 100 yards astern of us. We scored a direct hit on the motor torpedo boat as she was retiring, and she took little further interest in the proceedings.

"By now some vessel had opened up with a pom-pom. We had not previously noticed this vessel, which was probably a motor gunboat. She got one direct hit, which struck our bridge casing but caused no casualties.

"All this time there was a perpetual whine of machine-gun bullets, but it was difficult to see exactly which ships were firing.

"It was now decided to finish off the coaster which had been stopped earlier—the second target



IN CAPTURED BREMEN

Germany's second largest port, the much-bombed city of Bremen, was taken by the 52nd Lowland Division. This photograph, taken in a dockyard, shows pre-fabricated submarine sections which the R.A.F. prevented from being assembled.

engaged—and also the other escort. They both sank after a few short-range water-line shots. Then fire was directed at another ship. Two direct hits were obtained and his bridge demolished.

"By this time the barrel of our 3-inch gun was so heated that the next round jammed. Moreover, the remainder of the convoy was getting out of range and we had exhausted all the ammunition for our Oerlikon and Vickers guns, and I was getting anxious about the navigation. I decided to call it a day, as the situation did not justify the risk of running the submarine aground."

But the part of the Royal Navy in the Burma campaign was not concerned only with intercepting and destroying Japanese vessels concerned with the reinforcement and supply of the Japanese army in Burma. There were also any number of occasions in which warships co-operated closely with the military, not only in combined operations, but also in providing bombardments—in many cases the only artillery support that the troops could expect. One of the most astonishing stories of a British destroyer engaged in amphibious operations in support of the Army is provided by the exploits of a destroyer when supporting the Royal Garwhal Rifles in the operations of clearing the Japanese from Ramree Island—a large island lying off the Burma coast south of Akyab. When, after weeks of this work, the destroyer returned to

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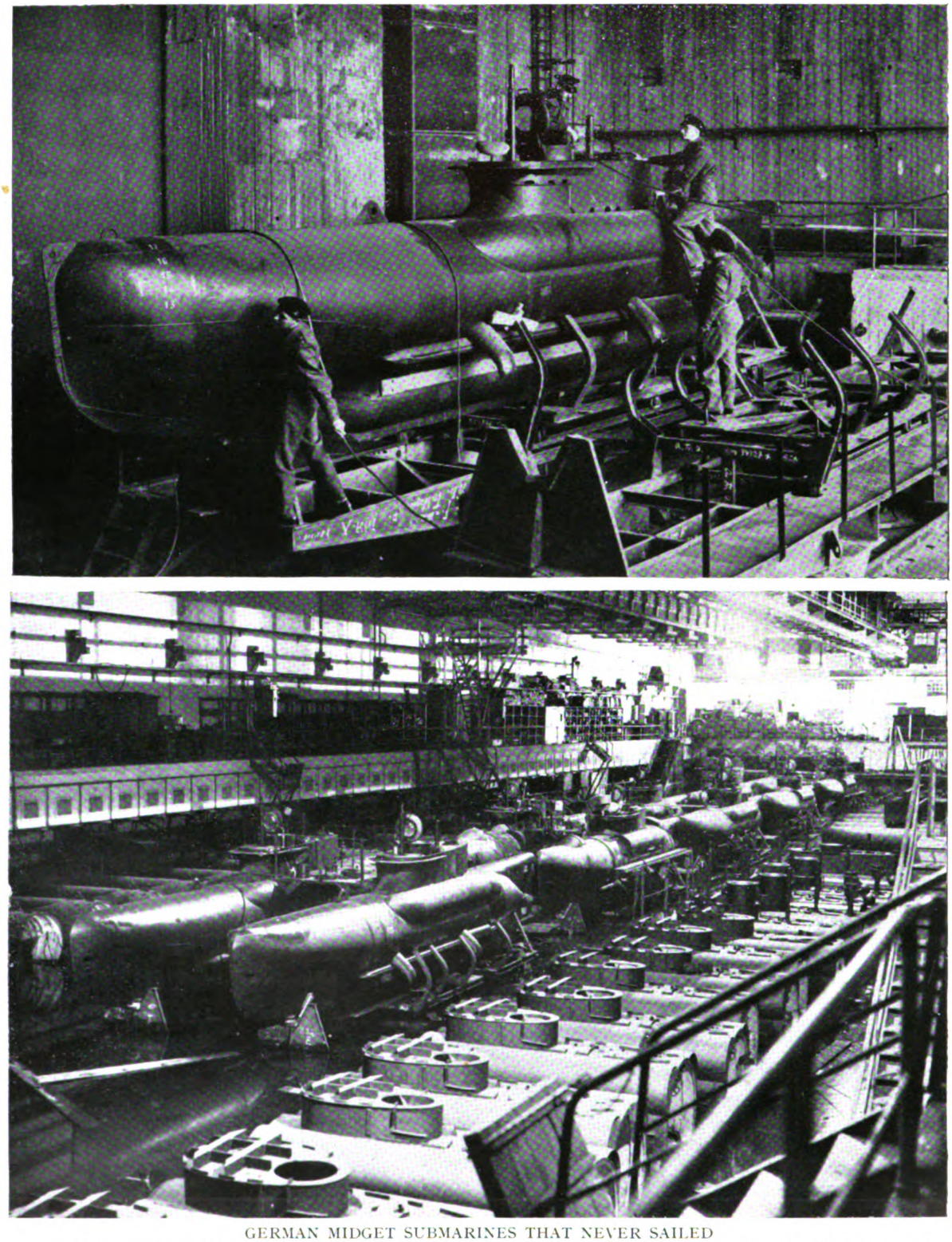

GERMAN MIDGET SUBMARINES THAT NEVER SAILED

During the closing months of the war the Germans made extensive use of midget submarines, and great toll was taken of them in a series of actions. The above photographs were taken in a gigantic shelter where the tiny U-boats arrived in sections and were assembled.

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Specially drawn

BRITISH DESTROYERS SINK A POWERFUL

A gallant and spirited attack by British destroyers which led to the sinking of a Japanese heavy cruiser took place on May 16th, about 50 miles west-south-west of Penang, Malay Peninsula. The enemy, which was later identified as the *Haguro*, a powerful cruiser belonging to the "Nati" class armed with ten 8-in. guns, twelve 5-in. guns and sixteen torpedoes, was first sighted in the North Malacca Strait by Avenger aircraft operating from the escort-carrier *Shah*. The cruiser was proceeding on a south-easterly course and was accompanied by one destroyer. The naval aircraft concentrated an attack on the enemy cruiser, obtaining one probable

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by MONTAGUE B. BLACK, F.R.S.A.

JAPANESE CRUISER IN THE MALACCA STRAITS

hit with a bomb. Meanwhile, a force of destroyers, under the command of Captain M. L. Power in H.M.S. *Saumarez*, proceeded at speed to intercept, and made contact with the enemy at night. Torpedo attacks were carried out by the destroyers, who courageously closed the range to a mile before firing, and shortly after midnight the enemy cruiser was seen to sink. H.M.S. *Saumarez* sustained a small number of casualties; the remainder which included *Virago, Vigilant, Venus* and *Verulam*, suffered neither casualties nor damage. This drawing by our special artist, Montague B. Black, F.R.S.A., gives an impression of the gallant, well-executed attack.

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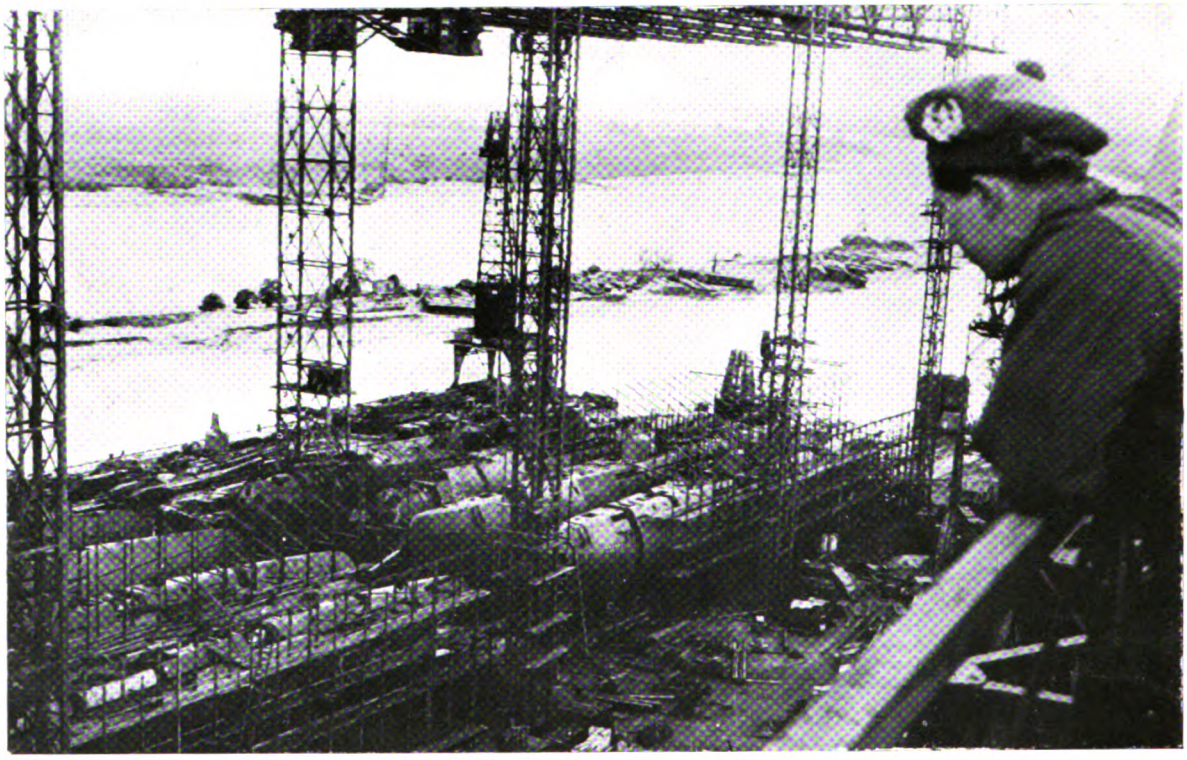
her base with a Japanese flag fluttering from her bridge, there were many who frankly disbelieved the tales that her crew told, but they have since been substantiated. The story is best told in the words of the First Lieutenant of that destroyer, who gave this account of those amazing exploits:

"After supporting the initial assault force, we later continued to cover the advance of the Royal Garwhal Rifles as they pressed after the Japanese. Within a minute of receiving a message from the Forward Observing Officer, a Royal Artillery Captain, we were able to plaster the enemy positions each time the Army were about to advance. We carried out thirty-two bombardments with exceedingly good results.

"It was when I waded ashore from one of the ship's boats laden with canteen stores for the Army that we were presented with the Japanese flag by an Army officer. It had been captured from a Japanese platoon whose men apparently all came from the same village. It was emblazoned with the usual



U-BOATS THAT WERE NEVER FINISHED

When the docks at Bremen were finally cleared by the 52nd Lowland Division at least 16 big ocean-going U-boats were found intact. Here a Scottish soldier is looking down on a row of partly-built U-boats in Bremen docks.

scarlet sun and was covered with 'pep messages' in Japanese characters from the grey-beards and girl-friends of the village. With the flag came a message from the Garwhalis to the commanding officer of the destroyer expressing the 'comfort and confidence' that the ship's guns gave them, and promising a Japanese sword as a gift 'next time.'

"During part of the Ramree operations the destroyer was secured to a mangrove tree in a river some twenty miles inland from the sea. The Army had closed round the Japs and their only means of escape lay across the river. With our backs to the wall of the jungle, we pumped salvo after salvo across the river.

"One night a small party of Japanese managed to cross the river in sampans farther upstream. In case they should get behind us in the jungle and snipe at us from the mangroves, we slipped into midstream. Sure enough, the next night a small party of them came out of the bush just where our stern had been secured. Almost invisible under the overhanging foliage of the river bank, they began to slip downstream in their sampans, but a landing craft manned by Royal Marines was also hidden under the bank. At point blank range the Marines soon put paid to the Japs.

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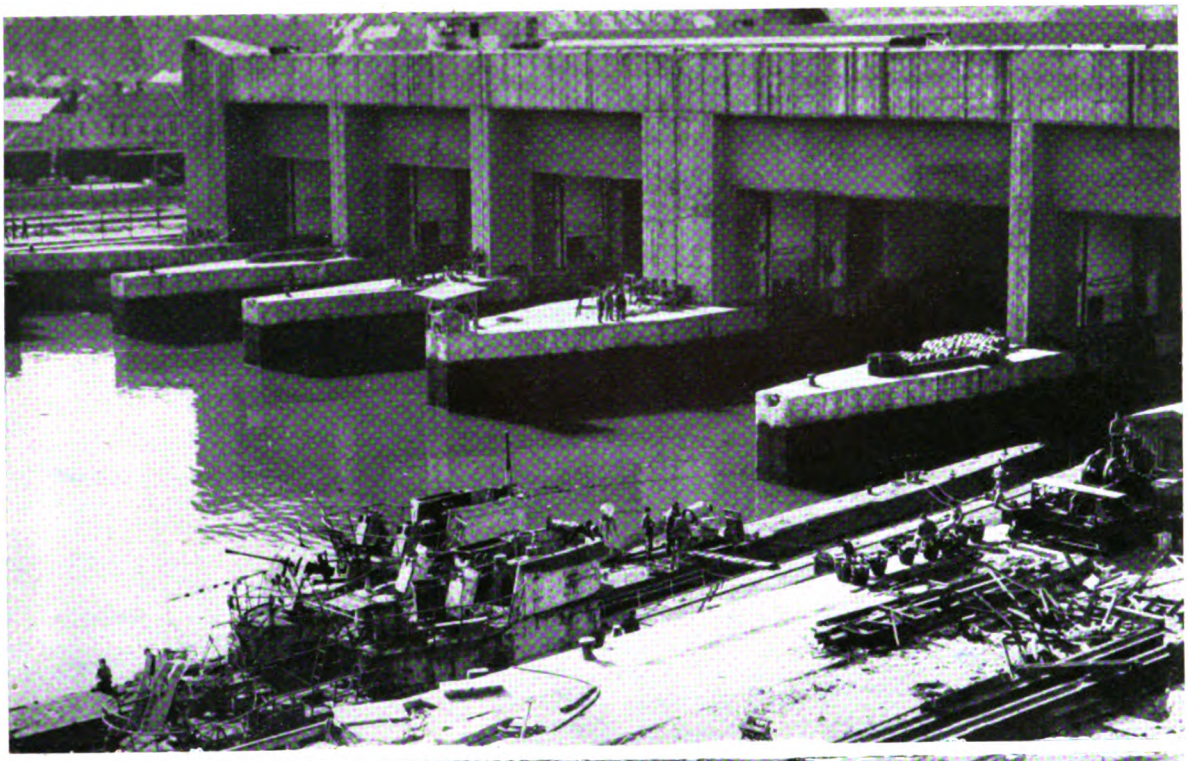

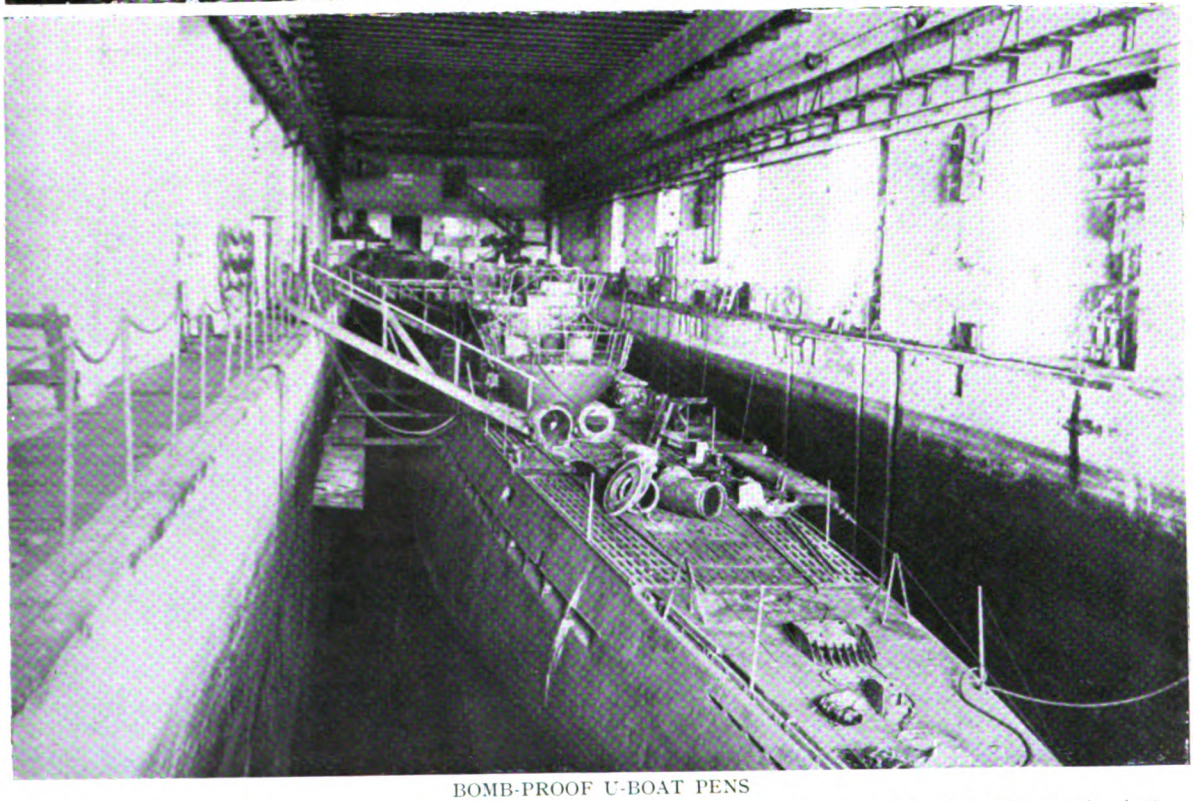

BOMB-PROOF U-BOAT PENS

One result of Germany's defeat and her consequent disarmament will be the destruction of the lairs of the U-boats, the giant submarine-pens of reinforced concrete built on France's Atlantic coast and elsewhere. Heavy charges of explosive will be needed to destroy these bomb-proof structures. The photographs show: top, the submarine-pens at Trondheim in Norway; bottom, a submarine-pen at St. Nazaire, with a U-boat ready for overhaul.

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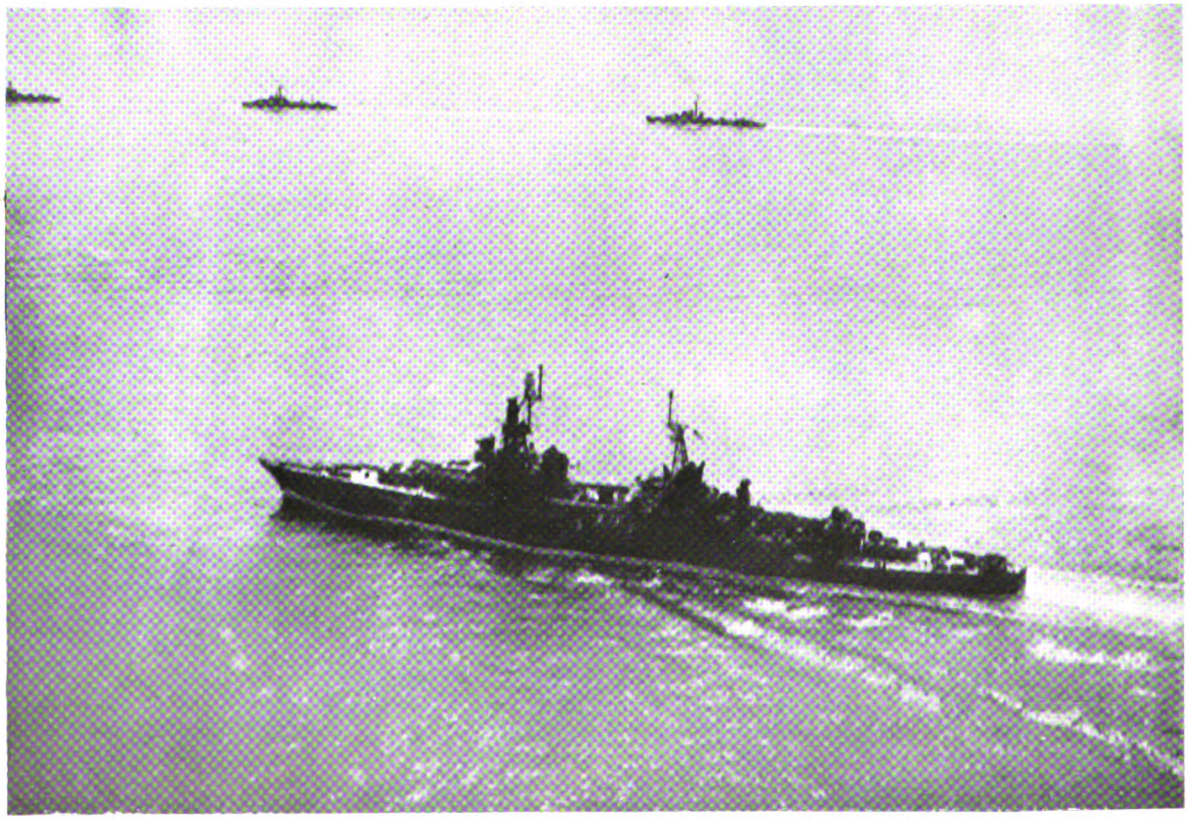
"On one occasion our guns kept a party of Japanese running madly in all directions. The Garwhalis were about to invest a village which they thought was deserted when suddenly the Forward Observing Officer signalled to us that he could see through his binoculars a dozen Japanese sitting under a tree. He gave direction for our fire. The range was over four miles.

"After the first salvo the Japs must have taken to their heels, for the Forward Observing Officer signalled 'good shooting,' and then gave us a correction to put on our sights. Again our shells fell very close to them, and again we were given a correction. Very soon we had those Japs running in a figure of eight, every time they turned from one shell burst they turned towards another. It was soon over for them.

"Fulfilling the destroyer's role of 'maid of all work,' we supplied over 50 tons of fresh water to smaller craft, repaired a motor launch's main engines and charged the batteries of another, towed a grounded destroyer off the shore, supplied canteen stores to the Army, and at one time transported 400 troops."

The exploits of that destroyer, twenty miles up a virtually uncharted river and surrounded by dense jungle capable of giving concealment to several thousands of Japanese troops almost within biscuit-toss, savour of an extract from a book of highly coloured adventure stories for boys—yet they were "just part of the job." They are a commentary, too, upon the amazing adaptability and flexibility of the Royal Navy, for that destroyer had played notable parts in the Battle of the Atlantic and in the protection of Malta convoys, and had three U-boats to her credit.

Battleships and cruisers as well as smaller craft played a big part in providing gunfire support to the Army during the Burma campaign. No fewer than 247 separate bombardments were carried out in support of the land operations along the Arakan coast of Burma. In those 247 bombardments ships' guns up to 15-inch calibre fired a total of 23,300 rounds. More than 18,000 four-inch shells were used against Japanese pill-boxes, batteries, and strong-points.



CRUISER WHICH BROUGHT PRESIDENT TRUMAN TO EUROPE

The U.S. cruiser *Augusta*, which brought President Truman to Europe, photographed in the Channel. In the distance are three of the British destroyers which escorted her, *Zealous*, *Zephyr* and *Zodiac*.

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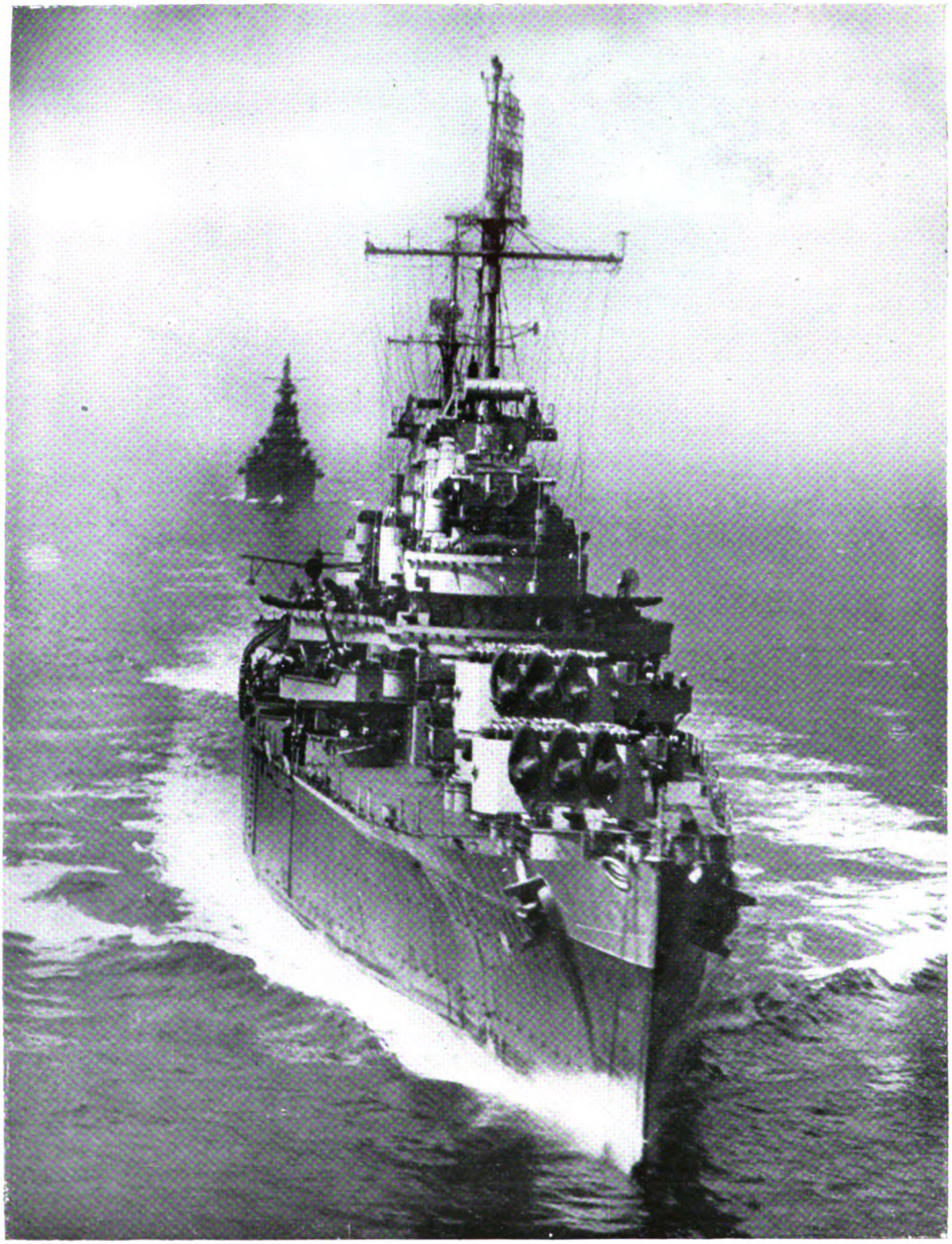

PRESIDENT TRUMAN'S SHIP ARRIVES IN EUROPEAN WATERS

An air view, taken from a British Naval plane flying over the Channel, of the U.S.S. *Philadelphia* leading the cruiser *Augusta* which carried President Truman to the Conference of the Big Three. He landed at Antwerp, drove from there to Brussels, and then flew on to Potsdam.

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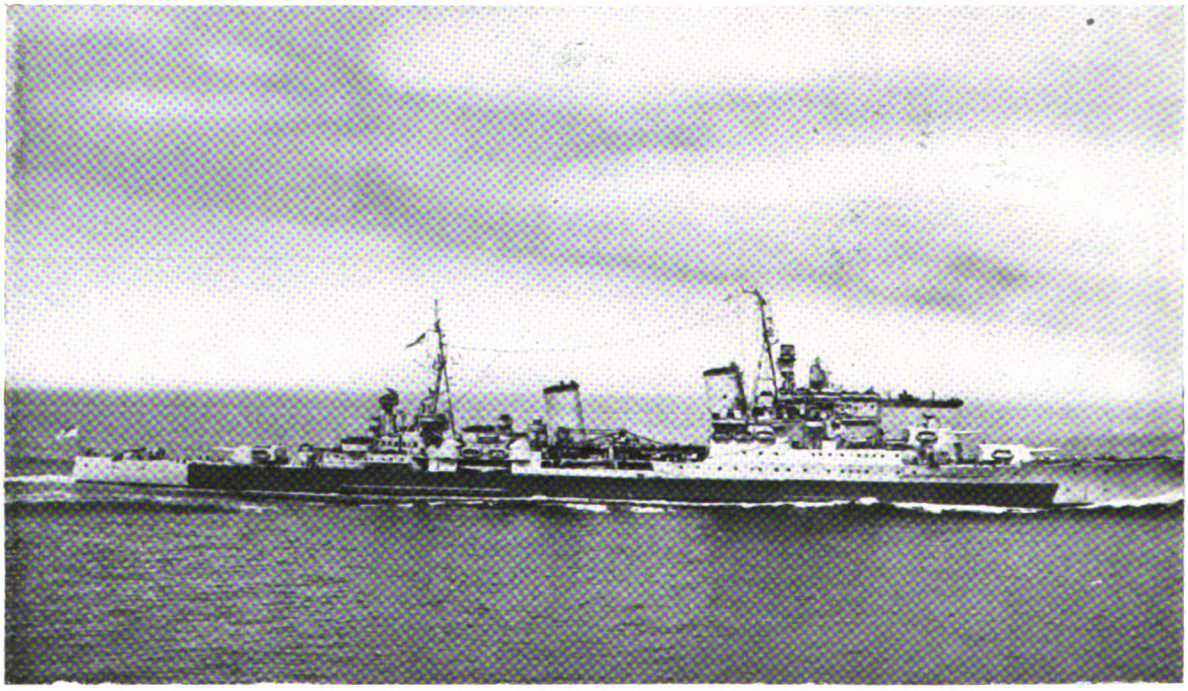
The number of shells fired by the Royal Navy during the bombardments of enemy positions along the Arakan coast was one-third more than the number of shells used during the invasion of the South of France and amounted to about 40 per cent of the total number of shells fired during the invasion of Normandy, where much larger naval forces were employed. In considering these figures one should bear in mind the immense distances over which all this ammunition had to be transported to the Indian Ocean, and the great part which the officers and men of the Merchant Navy played in the transport of all manner of supplies in addition to ammunition.

CHAPTER X

It had long been appreciated by those in charge of the major strategy of the war that one of the main reasons behind the Japanese southward drive had been the need for oil. The Dutch East Indies and Borneo are very rich in oil. It followed that loss of the products of these oilfields would be a very severe



ESCORT FOR THE PRESIDENT'S SHIP

Another view taken from one of the British planes which flew over the Channel to greet President Truman's cruiser on its way to Antwerp. It shows the British cruiser *Birmingham* which, with six destroyers, escorted the American ships.

blow to Japan, one, in fact, which would seriously jeopardise Japan's ability to carry on the war for any length of time. There were three ways in which the products of the oilfields could be denied to Japan; by reconquest of the oil-bearing areas by the Allies, by destruction of the oilfields themselves, and by destruction of the refineries which reduced the crude oil from the wells to the forms in which it is used in ships, aircraft, tanks, and land transport. The time was not yet ripe for the first alternative; it is almost impossible to effect the complete destruction of oilfields, and quite impossible by air attack. There remained the third alternative—the destruction of the refineries. In this the arrangement of the oil industry of the Dutch East Indies favoured the Allies, for in Sumatra—the largest of the Dutch East Indian islands and by far the most important from the oil-bearing point of view—the products of the oil wells were refined in great refining plants set up close to the oilfields.

It was against these refineries, therefore, that the Allies decided to strike. They were, however, out of reach of aircraft operating from any base then in our hands. Here, then, was a task for the carrier-borne aircraft of the Fleet Air Arm, and right well was the task discharged by them.

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LIBERATION PARADE IN OSLO

Contingents from H.M. ships *Bellona* and *Diadem* took part in the parade of Allied representatives in Oslo, when King Haakon thanked them for the liberation of Norway. The top picture shows the King making his speech of thanks—he spoke in English. The lower picture shows a little Norwegian girl greeting some of our sailors with flowers.

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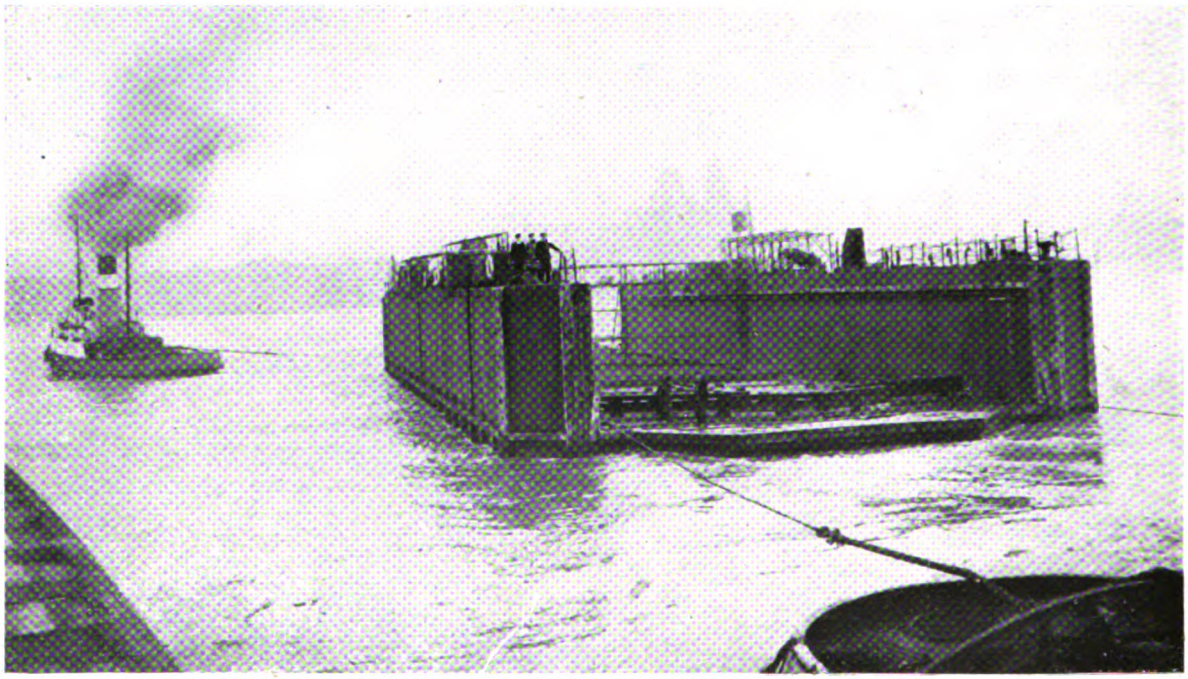
The first attack delivered by the Fleet Air Arm upon the refineries in Sumatra was aimed at the installations at Pangkalan-Brandan—which fortunately also has the simpler name of Medan—in northern Sumatra. That attack, which was launched on December 20th, 1944, was a disappointment. The Fleet Air Arm aircraft found that the cloud conditions over the area containing the oilfields and refineries were such as to preclude successful attack, and they were forced, therefore, to abandon this objective and confine their attention to the harbour and quays of Belawandali, the port of Medan. Here they did well despite low clouds and frequent tropical rain squalls. Jetties, warehouses and railway yards were seen to be hit by low-altitude bombing, while a petrol tank and an oil tank were set on fire by fighters. On the same day airfield installations and harbour craft over a wide area of northern Sumatra were shot up and damaged by naval fighter aircraft.

On January 4th the carrier-borne aircraft of the East Indies Fleet launched a second attack against the oil refinery installations at Medan. This time the aircraft had better luck. The weather over the target was favourable and the defences were caught by surprise. Both bombs and rockets were used in



FLOATING DOCK STARTS ON ITS LONG JOURNEY

Powerful tugs towing A.F.D. 67 down the River Mersey on the first part of its journey to the Far East. This huge concrete floating dock, built within three months, has done service for the Royal Navy in the struggle against the Japanese.

this attack, and although great rolling clouds of black smoke obscured the target very soon after the attack began, it could even at that stage be seen that all the buildings vital to the refinery installation, except one, had been hit and were on fire.

As a result of this attack it was considered that the oil-refining capacity of northern Sumatra had been so seriously reduced, if not eliminated, that it did not merit further attack at that time. The attention of the Fleet Air Arm was therefore switched to the even bigger and more important oil refineries of southern Sumatra. Two very successful operations were carried out against these refineries by a strong force of naval aircraft operating from the big aircraft-carriers H.M.S. *Illustrious*, H.M.S. *Victorious*, H.M.S. *Indomitable*, and H.M.S. *Indefatigable*. This aircraft-carrier force was under the command of Rear-Admiral Sir Philip Vian, K.C.B., K.B.E., D.S.O., and it was these operations which, as already stated, were carried out at the direct request of Admiral Nimitz, the Supreme Allied Commander in the Pacific, Admiral Nimitz accepting the delay in receiving these important reinforcements to the Combined Pacific Fleets that the Sumatra operations would inevitably entail.

In carrying out the Sumatra operations Rear-Admiral Vian's aircraft-carriers were, of course, not

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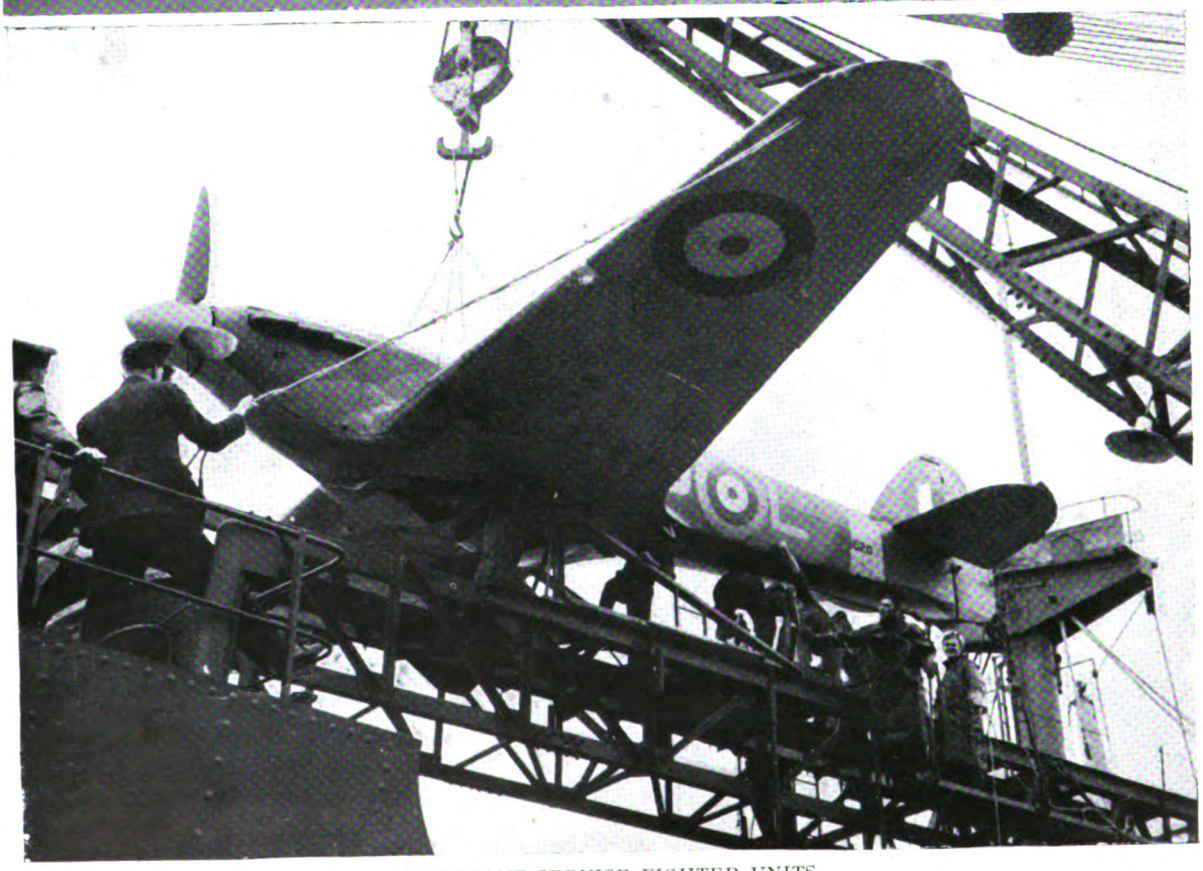

MERCHANT SERVICE FIGHTER UNITS

The Merchant Navy fighters played a daring part in the war at sea. Pilots, with a small maintenance staff, travelled with defensively armed merchant ships in convoy, their aircraft being catapulted into action when enemy aircraft were sighted. At the end of a combat, or when running short of fuel, the pilot would endeavour to land on friendly territory, if he was too far out at sea, he baled out and took to his dinghy, hoping to be picked up. These photographs show the plane, a Hurricane, being placed in the catapult, and starting on its hazardous journey.

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alone. They were covered by a strong force which included the battleship H.M.S. *King George V*, the cruisers *Argonaut*, *Black Prince* and *Euryalus*, and the destroyers *Grenville*, *Kempenfelt* and *Ursa*.

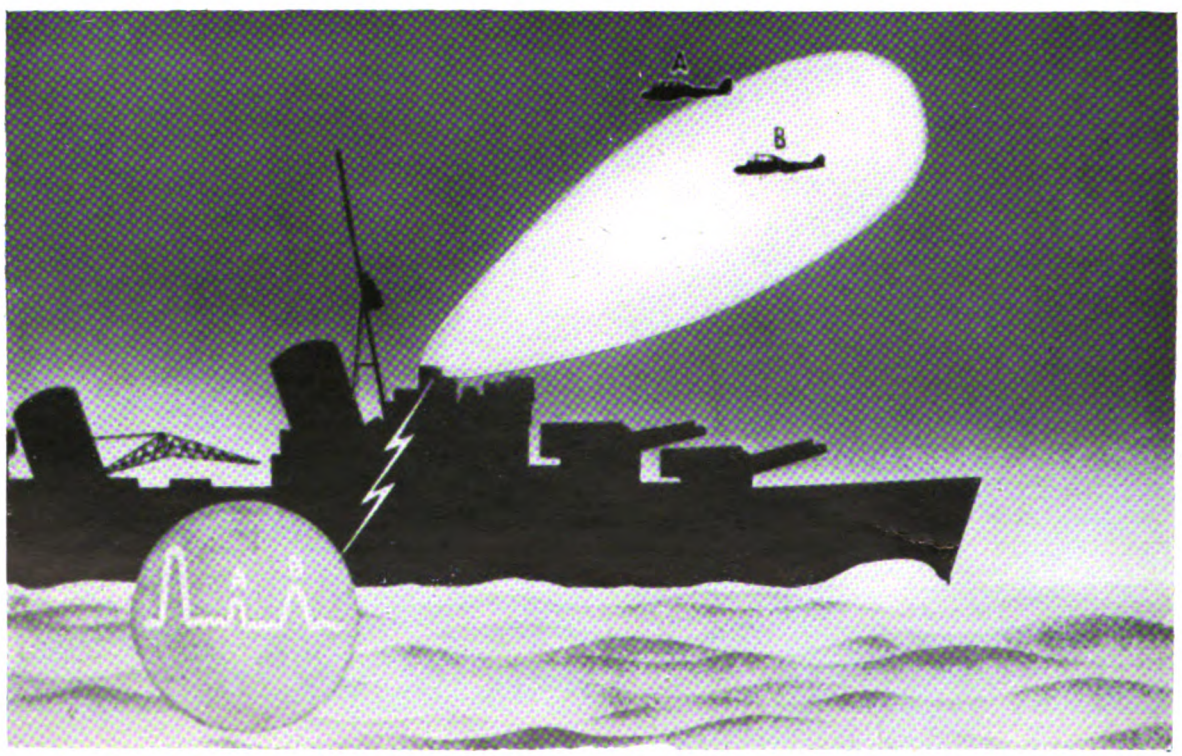
Both the attacks carried out by the aircraft from Rear-Admiral Vian's aircraft-carriers were directed against the great oil refineries at Palembang, near the south-eastern end of Sumatra. These refineries were among the biggest in the world, and their importance to the Japanese can be gauged from the very strong defences which had been set up around them. In the vicinity the Japanese had constructed a whole series of airfields and provided them with large numbers of fighter aircraft. There were also outer and inner rings of anti-aircraft batteries and an extensive balloon barrage.

The difficulties of the attack were not concerned solely with the Japanese defences. Aircraft operating from carriers steaming off-shore in the Indian Ocean had to cross the Barisan mountains, which run down the west coast of Sumatra, and make a long flight over enemy-occupied territory. Nor, after the successful attack on Medan, could it be reasonably hoped that the Japanese at Palembang would be taken by surprise.

The first attack against the Palembang refineries was launched on January 24th, the striking force consisting of Avengers, strongly escorted by fighters, including Fireflies.

While the striking force was still some miles short of the target, it was intercepted by a considerable force of Japanese fighters. The naval fighters immediately tore in among the Japanese formations and broke them up. In the ensuing air fighting thirteen twin- and single-engined Japanese fighters were shot down for certain, while six more were accounted "probably destroyed." The striking force of Avengers went on, reached the target and began an attack which history may well assess as one of the decisive actions of the war.

The objective was the great Pladjoe Refinery, and this the naval aircraft bombed with great accuracy and effect. While some of the aircraft bombed from above the balloon barrage, others dive-bombed through the balloon barrage—a combination of tactics which appeared to confuse the Japanese anti-aircraft gunners. Many direct hits were scored on the oil-distilling plants and a great many other buildings



RADAR AT SEA

A diagram showing aircraft caught in the Radar beam of a warship. Plane A, which is not fully in the beam, is seen by the operator as the smaller inverted V in circle on left; plane B, in the full beam, is the bigger inverted V; and the unmarked "hump" in the circle is the Radar transmission signal.

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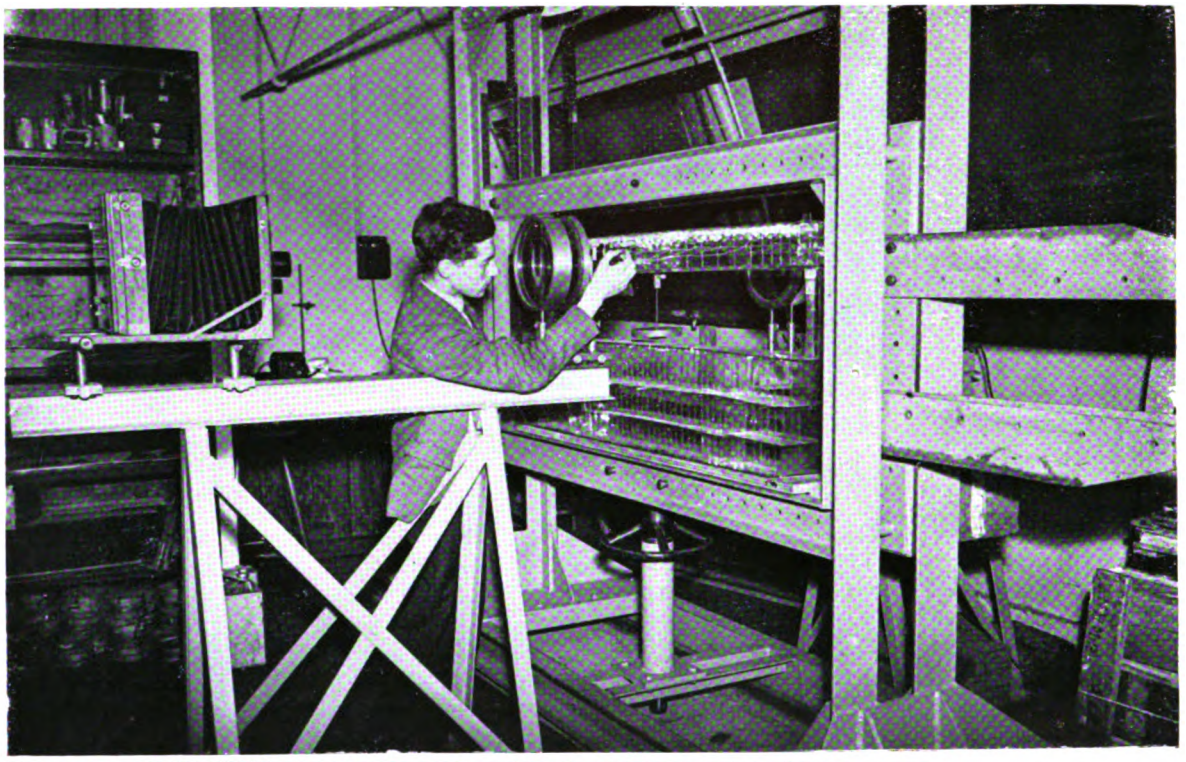

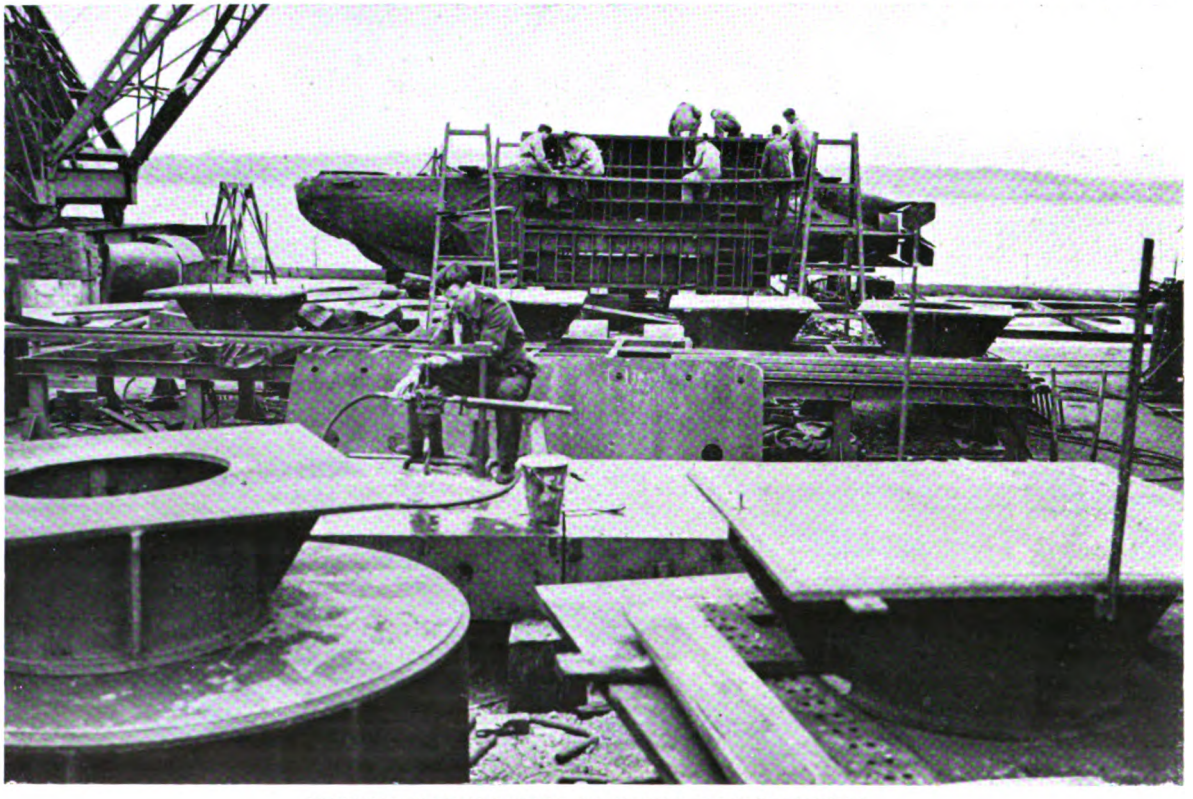

TESTING MODELS USED IN NAVAL CONSTRUCTION

British naval construction has not ended with the cessation of hostilities; and these two photographs show activities at Undex (Underwater Explosives Department), Rosyth. The top picture shows the Photo Elastic Apparatus used to determine stresses in ships' structures by means of polarised light, with a test being carried out on a section of a model aircraft-carrier made of xylonite. The lower picture shows work on a quarter-scale model of the bulge structure of a ship, a midget submarine is seen in the background.

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were hit and set on fire. It was obvious that the Pladjoe Refinery had been effectively put "out of business" for a long time to come.

The attack, however, had been far from easy and had not been carried out without loss. Lieutenant-Commander D. R. Foster, R.N.V.R., who was leading one of the squadrons, said afterwards: "At one point it looked as if clouds would be covering the target, but our luck was in and we could see the muddy Moesi River below us, with Palembang, and then, farther down, Pladjoe and Soengei Gerong on its banks.

"Enemy fighters had been trailing us for half an hour, but it wasn't until the barrage opened up and the squadrons deployed to attack, that they struck. Then four Oscars attacked us. It was only a matter of seconds before we were diving through the balloons towards our target, but in those few seconds two of our aircraft were so badly hit that they never came back, while two limped home to 'ditch' alongside the Fleet. Four did not return to the carrier, while five of the remaining eight in my squadron were damaged by fighters or flak."

FIGHTING SHIPS

H.M.S. *Derwent*, a destroyer of the Hunt class, going alongside the aircraft-carrier H.M.S. *Illustrious*. The *Derwent's* armament includes four or six 4-inch guns as well as two 21-inch torpedo tubes.

One of the pilots who "limped home to 'ditch' alongside the Fleet" was Sub-Lieutenant Roy Halliday. He brought his badly damaged Avenger back and landed alongside a destroyer without injury to himself or his crew.

Lieutenant D. Judd, R.N.V.R., gave this account of the attack: "I was leading the second flight of the squadron. No opposition was met until we were about ten miles from the target. Then, at 9,000 feet, enemy fighters attacked us from astern and kept up determined attacks until we reached the target. At the same time the enemy put up a pretty accurate and heavy anti-aircraft barrage. That did not worry me a lot and I dived down through it and dropped my bombs on the target, which was easily identified. When I pulled out of the dive and was making my getaway the whole target was ablaze and thick smoke was rising high above the refinery. I was lucky enough not to suffer any damage to my aircraft and we returned to our carrier without any further trouble."

Major R. C. Hay, Royal Marines, and Sub-Lieutenant D. J. Sheppard, R.C.N.V.R., claimed two enemy

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INSPECTION OF GUARD OF HONOUR FROM H.M.S. *EXCELLENT*

During a visit to the naval base at Portsmouth His Majesty the King made a long tour of inspection and took the salute at three march-pasts and a ride-past of Wren despatch-riders. With H.M.S. *Victory*, Nelson's flagship at Trafalgar in the background, His Majesty is seen inspecting the guard of honour from H.M.S. *Excellent*.

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aircraft during the raid. The first, a Tojo, was attacked about 200 feet above the ground. Flames came from the wing and the cockpit and the enemy aircraft crashed within a few seconds. The second victim to fall to these two pilots was an Oscar, also about 200 feet up, which crashed into the jungle.

As a commentary on the flexibility of the Fleet Air Arm it is worth mentioning that Sub-Lieutenant Sheppard, whose home is in Ontario, took part in the Fleet Air Arm attack on the German battleship *Tirpitz* in Alten Fiord, in the Arctic; in the raids in the Bodo area of Norway; and in operations against Sabang, Padang, and the Nicobar Islands.

Another Japanese aircraft trying to get away at a height of only 200 feet was shot down by naval fighters piloted by Lieutenant-Commander D. Hopkins, R.N., and Sub-Lieutenant A. Michie, R.N.V.R. Both these pilots saw their victim burst into flames and crash into the jungle.

Meanwhile, the Naval fighters, having seen to it that the Avengers reached their objective, turned their attentions to the airfields which surrounded the whole area. On these airfields they destroyed 34 Japanese aircraft and damaged at least 25 others. The importance of their successes against the Japanese aircraft was to be demonstrated a few days later.

So ended the first attack launched from Rear-Admiral Vian's aircraft-carriers. The second attack was launched five days later, on January 29th, the objective being the Soengei Gerong Refinery, the other great refinery in the Palembang area.

BRITISH FROGMEN

A Frogman assisting another, who is standing in a rubber dinghy, into his swimming-suit. (See page 135 for story).

In this attack the good work done by our fighters during the first Palembang attack paid handsome dividends, for the Japanese fighter opposition was on a much reduced scale, and it was obvious that the enemy had been unable to replace the losses which he had suffered on January 24th. Even so, the Japanese lost more aircraft on January 29th. Eight were found over the target area and shot down for certain. Of others which were found in the air three were probably shot down, while four enemy aircraft were destroyed on the ground.

Bombing conditions were good when the Avengers arrived over the Soengei Gerong Refinery, and they pressed their attack home through the balloon barrage and regardless of the density of the heavy and light anti-aircraft fire. During the attack some aircraft flying at 3,000 feet were badly shaken by the force of a tremendous explosion on the ground.

So great were the clouds of black oil smoke which rose from the installations that it was difficult for the aircraft to assess at the time the exact results of their attacks. Next day, however, photographic reconnaissances were flown over both the Pladjoe and the Soengei Gerong Refineries. The photographs showed beyond doubt that these great installations would be useless for a very long time to come, even if the Japanese had the necessary replacements of plant at their disposal, which was most unlikely. Nearly all the principal installations had received direct hits and had afterwards been burnt out by oil fires which had spread from the adjacent oil reservoirs which had been set on fire. These very successful results had been achieved for the loss of fifteen naval aircraft in the two attacks.

It was, of course, obvious from the type of aircraft that we were using that they came from aircraft-carriers, and between the two attacks on the Palembang area the enemy tried to attack the East Indies Fleet and so prevent a second attack. They did not succeed. A number of attacks were made, and in every case except one the whole attack was beaten off before the enemy aircraft were able to approach the ships. In one attack only did any Japanese aircraft get through the fighter screen. On that

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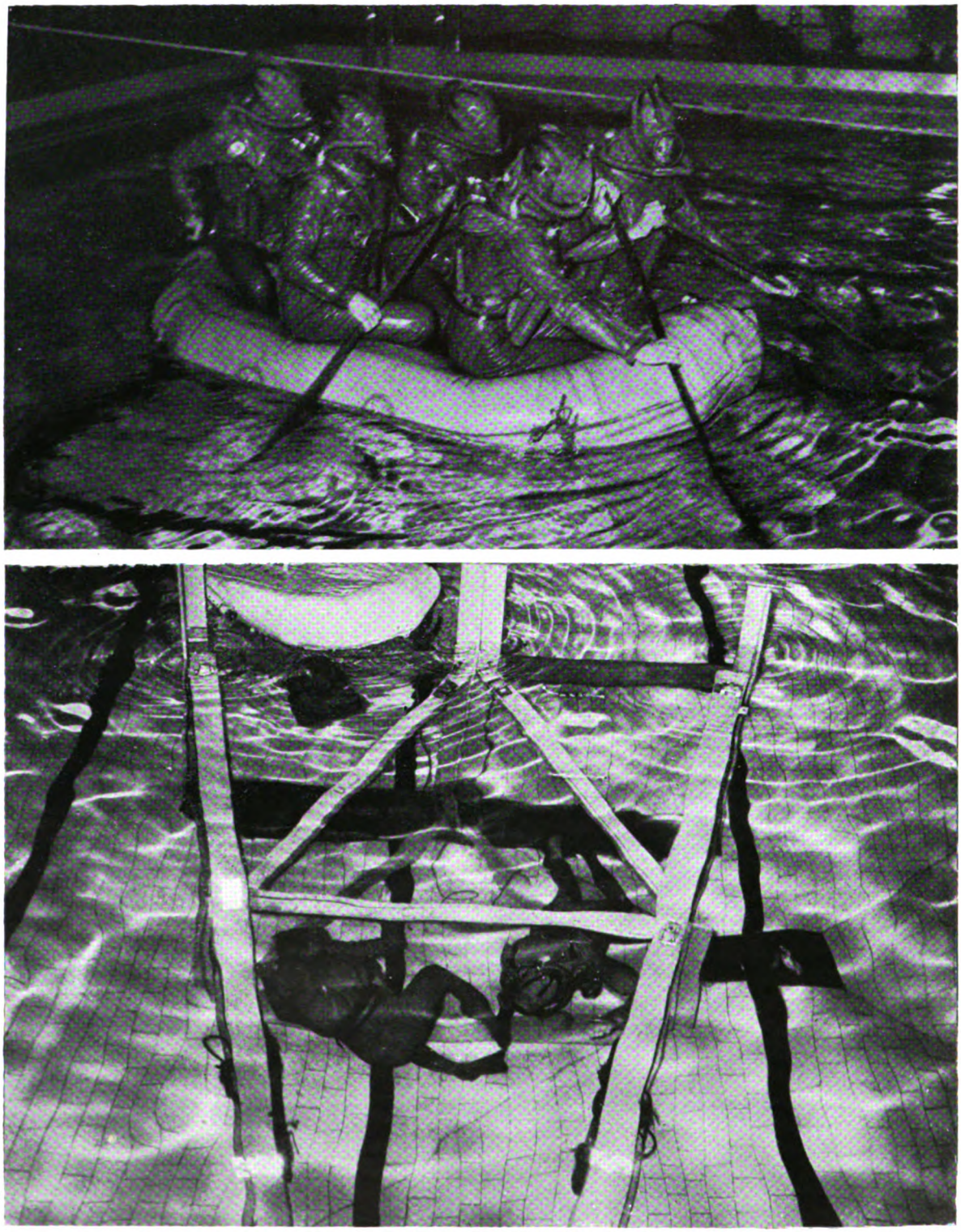

BRITISH FROGMEN

The Navy's silent service—"Frogmen" who blew up the underwater obstacles to make the D-Day landings possible. The Germans had constructed obstacles that even 500-lb. depth-charges could not destroy, but these highly-trained men in specially-designed diving suits practically destroyed the German underwater coastal defence system. Top, frogmen on a rubber dinghy during a demonstration. The dinghies were used for surface movement and for the transport of explosives near to the underwater operations. Bottom, frogmen attacking an obstacle similar to those used by the Germans.

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Specially drawn

GALLANT 10-DAYS' STRUGGLE BY TWO RESCUE TUGS TO

The ship's companies of H.M. rescue tugs *Saucy* and *Lariat* underwent an alarming and dangerous experience when towing a 2,750-ton floating dock for 10 days through an Atlantic gale. The two tugs ran into the gale on the first day of their voyage. It blew at full force the whole time, causing great seas to sweep through the dock. On the third day the *Lariat's* tow rope parted; and reconnection was made under great difficulty and towing was resumed, but the dock could not be held to her course. The rescue tugs were warned by one of the escort vessels, H.M. trawler *Northern Spray*, that they were drifting towards a submarine area, and in endeavouring to force a way back to the right course the *Saucy's* tow parted and they drifted still nearer the danger zone. All

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by MONTAGUE B. BLACK, F.R.S.A.

TOW A FLOATING DOCK THROUGH AN ATLANTIC GALE

through the night and the next day and night both tugs were hove to in the lee of the dock and then the *Lariat's* tow parted again, and the dock went completely adrift. After drifting 60 miles from their course the dock crew gallantly ventured into the flooded dock bottom to connect up the two lines, and after hours of work, with every man up to his neck in the swirling seas, they succeeded first in retrieving the *Saucy's* cable and then that of the *Lariat*, and towing was again resumed. Finally, the two tugs, their crews exhausted and the fuel almost expended, were recalled to the United Kingdom, and other tugs were sent to complete the operation. Our special artist, Montague B. Black, F.R.S.A., an accredited war correspondent, gives an impression of the tugs' hazardous adventure.

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occasion seven Japanese aircraft got through. Six of them were shot down by the fighters of the Fleet—Seafires and Hellcats, and the guns of the ships. The official account of this action states laconically that "the fate of the seventh is doubtful." None of the ships of the Fleet suffered any casualties or sustained damage as a result of these Japanese attempts.

So ended a series of operations, brilliantly conceived, carefully planned, and skilfully carried out, which had a far-reaching effect upon the strategy of the war against Japan in the Pacific as well as in the Indian Ocean.

The Admiralty's appreciation of the value of these attacks reads as follows: "As a result of this series of carefully planned and co-ordinated operations serious damage and destruction has been done to all the oil refineries in Sumatra. How grave a matter this will prove for the Japanese may be judged from the fact that hitherto some 75 per cent of all aviation spirit used by them has been produced at these refineries."

In modern warfare no nation can for long survive the destruction of the sources of three quarters of its supply of aviation spirit unless it has large alternative resources on which it can call. Japan had

H.M. AIRCRAFT-CARRIER *IMPLACABLE*

H.M.S. *Implacable* is one of Britain's largest aircraft-carriers. She is a sister ship of the *Indefatigable*, and was laid down in 1939. Built by the Fairfield Shipbuilding Co. she embodies considerable improvements on the *Indomitable* class of carrier.

certain alternative sources in so far as there was believed, according to the Allied Intelligence, to be a surplus of oil refinery capacity in Japan itself. This might have been called in to solve—at least in part—her problems of shortage of aviation spirit had it not been for the fact that the knocking out of the Sumatra oil refineries was but part of a closely co-ordinated strategic plan on the part of the Allies.

For many months before the attacks of the Fleet Air Arm aircraft on the oil refineries of Sumatra both British and American submarines had been concentrating, whenever the opportunity offered, on the sinking of Japanese tankers. This was a type of ship of which Japan did not possess an adequate reserve in ordinary oil-carrying service because a number of the biggest, best and fastest tankers had been converted into auxiliary aircraft-carriers for the Japanese navy.

There had been heavy losses among these and among the more conventional Japanese aircraft-carriers in the various sea battles ranging from Midway Island to the Coral Sea. Japan could not therefore contemplate with equanimity the re-conversion of any of these ships to purely oil-carrying duties. At the same time, the attrition achieved by the submarines of the American and British navies had resulted in a grave shortage of ordinary tanker tonnage in the Japanese mercantile marine.

In order to make use of the surplus refinery capacity in Japan itself for the production of aviation spirit from the crude oil (which was still available from the Sumatra oilfields), the Japanese would have

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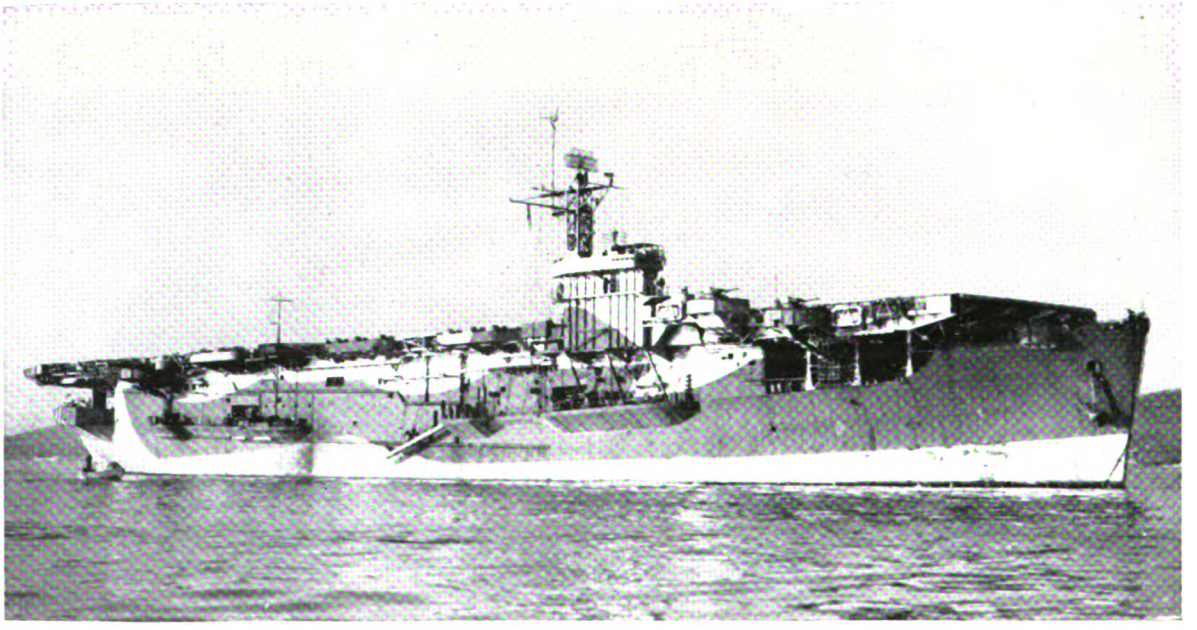

CRUISER, BATTLESHIP AND ESCORT-CARRIER

The lower picture shows the escort-carrier H.M.S. *Begum*, of the Ruler class, with a displacement reported to approach 9,000 tons. The centre picture is of the 29,150-ton battleship H.M.S. *Royal Sovereign* after she had been handed over to the Russian Navy. The top picture shows the 10,000-ton cruiser H.M.S. *Belfast*, whose armament includes twelve 6-in. guns, twelve 4-in. A.A. guns, and six 21-in. torpedo tubes.

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TESTING THEIR A.A. GUN

French gunners in a submarine chaser giving their A.A. gun a thorough inspection and firing test.

had to take the crude oil to Japan to be refined, and then to distribute the resulting aviation spirit to the fighting fronts, then ranging from Formosa and the Philippines to Burma. Since these fighting fronts were far nearer to Sumatra than to Japan, such a commitment would have required at least twice as much tanker tonnage as had been used when Japan was using the Sumatra refineries and able to supply the fighting fronts with aviation spirit direct from the Sumatra refineries. This Japan's shrinking tanker tonnage was quite unable to do. It had already been fully extended before the Sumatra refineries were put out of action, and even then shortages were becoming apparent from time to time. It could not possibly hope to deal with a task which had suddenly been doubled. Nor was that the only aspect. If the Japanese did try to transport crude oil to Japan for refining and then to ship the refined products southward to the fighting fronts, each tanker would have to pass twice through the area between Formosa and Japan, where the American submarines were most active and most consistently successful, so that it could be expected that the Japanese tanker losses would be multiplied at the very time when Japan could not afford to lose a single tanker.

There is one other point regarding the successful operations against the oil refineries of Sumatra which should be noted, and it was well stated in these words by the Admiralty:

"An interesting feature of the operations lies in its demonstration of the strategical mobility conferred on aircraft when they are operated from aircraft-carriers. Since the Sumatra oil refineries were outside the range of our shore-based bombers, they could not have been attacked without the employment of aircraft-carriers. Without these attacks, the work of the Allied submarines in intercepting enemy tankers would not have accomplished such a complete success."

CHAPTER XI

THE work of the Allied submarines in their war of attrition against the Japanese shipping resources, and particularly against the enemy's tanker tonnage, was certainly proceeding in a most satisfactory manner.

Most of the losses imposed upon the larger Japanese vessels was at the hands of the submarines of the United States Pacific Fleet. This is not to be wondered at, for the American submarines were operating along Japan's main lines of sea communications running southward from Japan to the Philippines, South China, Malaya and the East Indies as well as to the Japanese outpost chains of islands in the Pacific. It was naturally on these long routes—from Nagasaki to Singapore is some 2,500 miles—that the Japanese used the larger and faster units of their dwindling mercantile marine, while the sea communications between the islands and on the west side of the Malay Peninsula were left for the most part to small coasting steamers and a variety of native craft. Thus the American submarines were, on the whole, presented with the more valuable targets, and they certainly made full use of their opportunities.

Let the figures given in the official Navy Department Communiqués speak for themselves. On February 15th, 1945—ten days after the second of the successful attacks on the Sumatra oil refineries at Palembang by British carrier-borne aircraft—the Navy Department made the following announcement: "American submarines have sunk 31 more Japanese vessels, including three warships, bringing the total of enemy ships announced as sunk by American submarines in the Pacific and Far East to 1,020."

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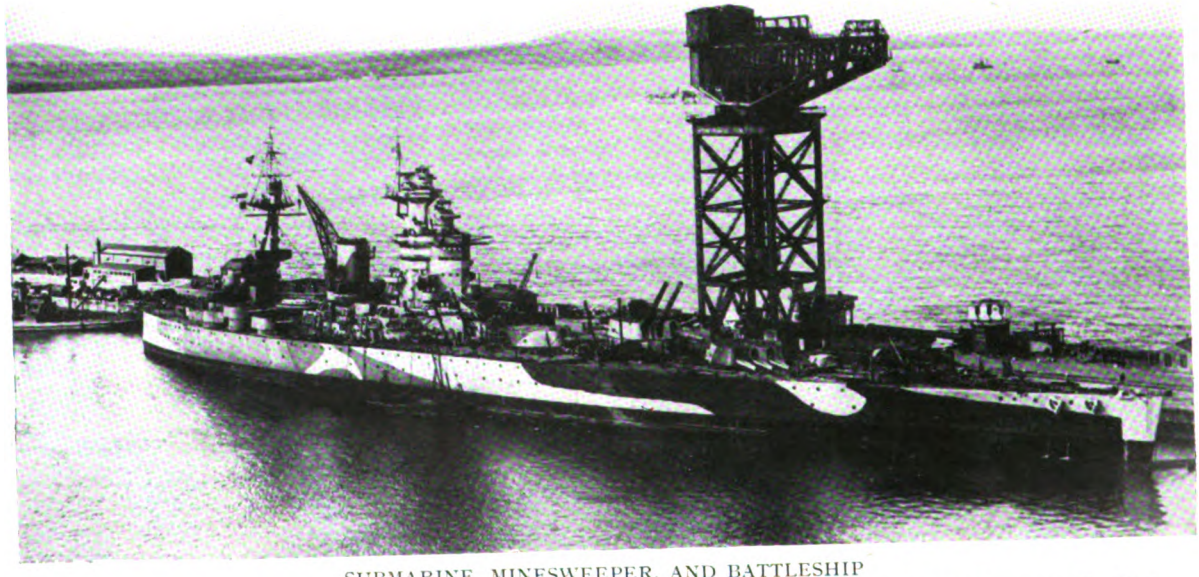

SUBMARINE, MINESWEEPER, AND BATTLESHIP

Three photographs taken in Home waters. Top, H.M. submarine *Tantivy* on her arrival back from service in the Far East, bearing on her flag a fox's head and hunting symbols denoting successes against the Japanese; centre, H.M.S. *La Capricieuse*, a modern minesweeping and patrol vessel built for the French Navy; bottom, H.M.S. *Nelson* refitting at Rosyth.

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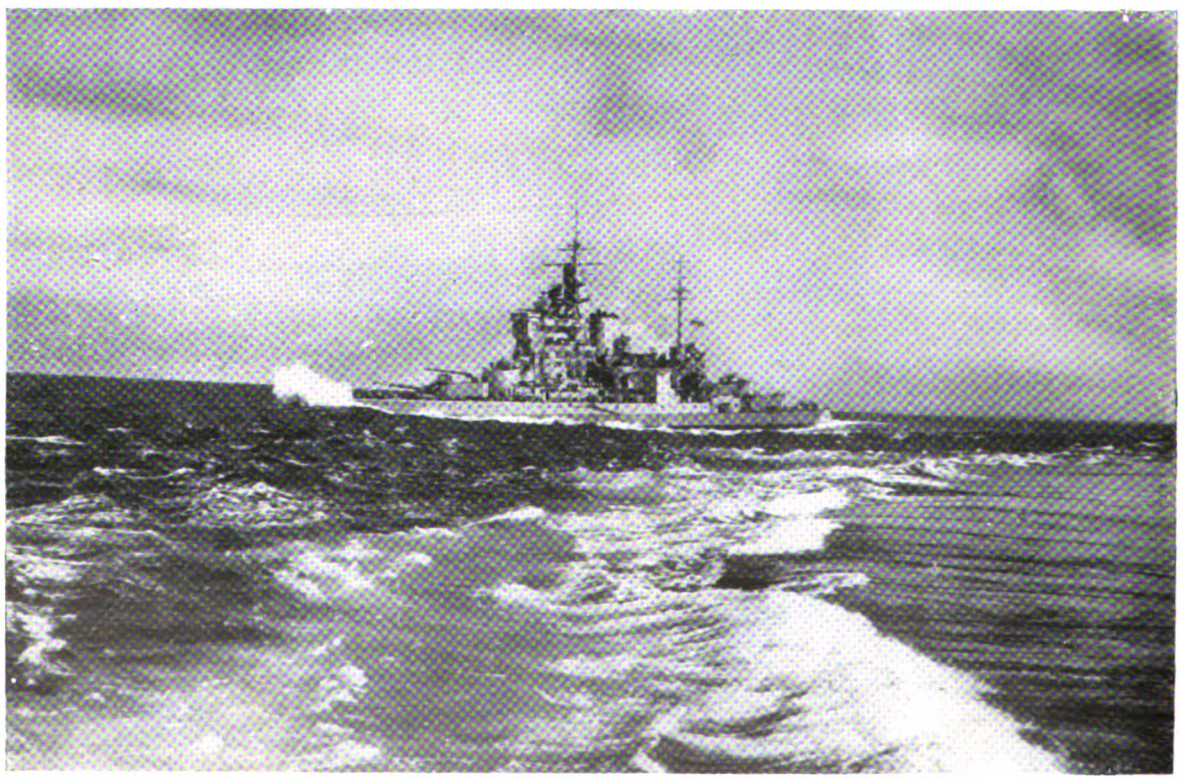
As was only to be expected of closely co-ordinated Allied strategy, there was at this time an intensification of the American submarine offensive in the Pacific in order that the successes of the British Fleet Air Arm at Palembang should be fully exploited and that the Japanese should be denied any chance of re-grouping such shipping as remained to them. Naturally, there was at the time no mention of this intensified submarine campaign, but its results were quick to show themselves in the official communiqués. Six days after the announcement quoted above, the Navy Department was able to make a further announcement, which said: "American submarines have sent a Japanese escort aircraft-carrier, a large converted cruiser, a destroyer, and 22 merchant vessels to the bottom in new operations." The last three words were significant. Then, less than four weeks later, came the announcement: "American submarines have sunk 15 more Japanese ships, including five combatant vessels, in the Pacific area."

These successes were not scored by the United States submarines without the taking of great risks, as was evidenced by the reports of submarines being "overdue and presumed lost" which occurred with melancholy frequency in the official communiqués. Moreover, these long pacific patrols, conducted at great distances from their bases, imposed great strains upon the crews and demanded the highest degree of determination from officers and men.

Because the American submarines were for the most part operating against ships of fair size and usually in open water, their attacks were usually fairly orthodox. Certainly they were far more orthodox than the methods which had frequently to be resorted to by the British submarines operating to the west of the Malay Peninsula. There the targets were small. Lieutenant-Commander E. P. Young, D.S.O., D.S.C., R.N.V.R., the commanding officer of H.M. submarine *Storm*, said on his return to England after a highly successful commission in the Far East: "Our commission would have been more profitable if targets had been more plentiful. Most of them were coast-crawling supply vessels, small in size, but valuable to the enemy because they were laden with ammunition and materials for carrying on the war against our troops in Burma. Still," he added, "on one of our last patrols we managed to put down eleven of these craft, sinking nine in one day."



H.M. BATTLESHIP *VALIANT*

A picture taken from H.M.S. *Renown* of H.M. 31,000-ton battleship *Valiant*. The *Valiant*, one of the "Queen Elizabeth" class, is armed with eight 15-in., twenty 4.5-in. as secondary armament and numerous smaller guns. Speed is 24 knots.

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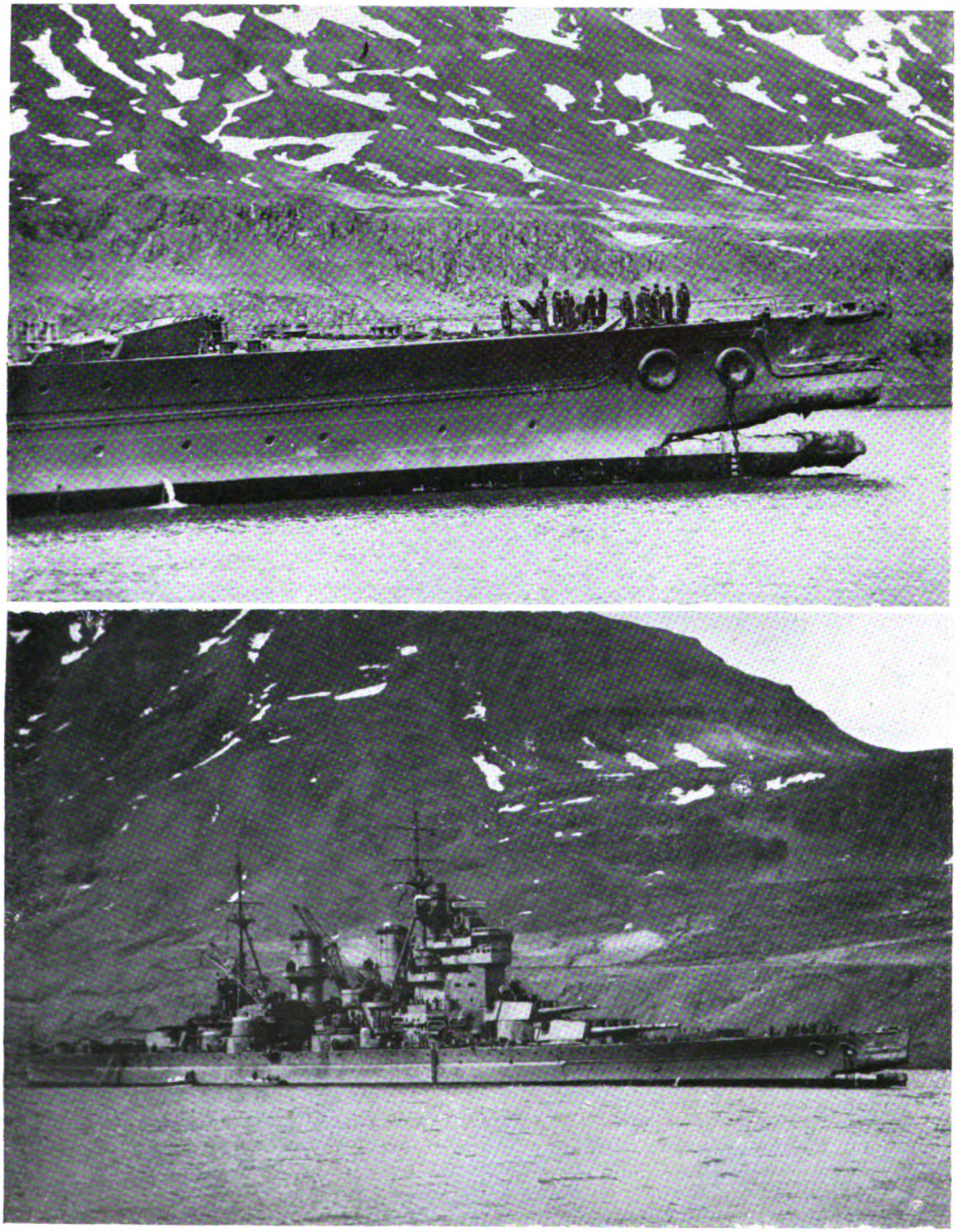

KING GEORGE V AFTER A COLLISION

The above pictures taken in an Icelandic fjord after the collision between H.M.S. *King George V* and H.M. destroyer *Punjabi*. Top, the huge hole in the bow of the *King George V* and bottom, the damaged ship just before her departure for Britain for repairs.

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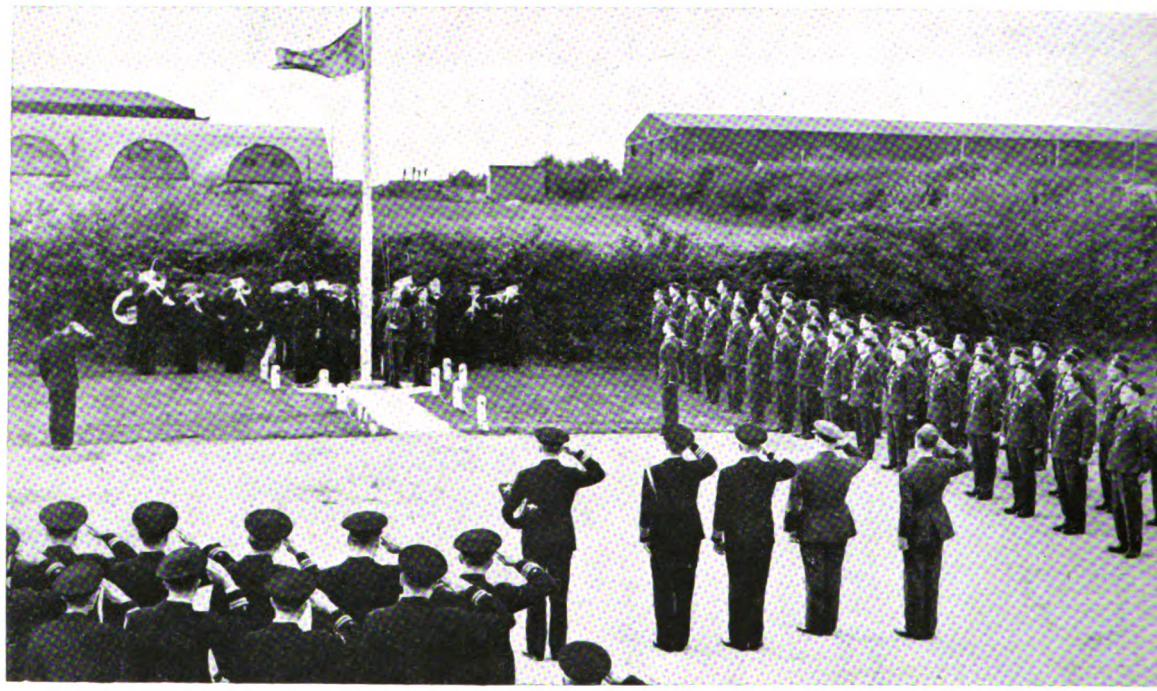
On one occasion Lieutenant-Commander Young, who was the first officer of the Royal Naval Volunteer Reserve ever to command one of His Majesty's operational submarines, took H.M.S. *Storm* into a Japanese anchorage on the surface in broad daylight, despite the fact that he knew that the channel was too shallow for diving and too narrow to enable the submarine to turn quickly to get out again. But Lieutenant-Commander Young thought it worth the risk, for there were two Japanese gunboats in the harbour. These H.M.S. *Storm* engaged and sank by gunfire and then extricated herself successfully, although, as one of the crew said afterwards, "It was a very lively party." The only casualty was a member of the gun's crew, who was wounded in the shoulder by a machine-gun bullet fired from the shore.

Another submarine commander who made a successful attack on Japanese ships in harbour was Lieutenant G. S. Clarabut, D.S.O., R.N. Through the periscope he had seen what looked like two coastal craft in the harbour, but when he brought his submarine to the surface in order to attack them



U.S. NAVY HAND BACK AN AIRFIELD

The Stars and Strips was lowered and the R.A.F. ensign raised during the ceremony at Dunkeswell in Devon which marked the handing over of the airfield there by the U.S. Navy to the R.A.F. Dunkeswell airfield, was the only U.S. Naval Air Base in Europe. In the foreground are U.S. naval officers who were stationed at this airfield, and on the right a detachment of the R.A.F. Regiment.

by gunfire he found that off the pier there were three small supply ships, a tug, and a submarine chaser, all heavily camouflaged.

The first task was to fight a gun duel with the submarine chaser. Here is Lieutenant Clarabut's story of that action. "The submarine chaser got under way with remarkable rapidity and opened fire on us. A gun duel lasted for twelve minutes, and at the end of that time the chaser was silenced and on fire forward. He then beached himself and took no further part in the battle, although we hadn't entirely finished with him.

"We then started on the coastal craft. Having sunk the largest of them by gunfire, I realised that at the rate we were firing, our ammunition would be expended before all the vessels were sunk, so we turned over to torpedo action. One torpedo destroyed the remaining coasters. Then, seeing that the submarine chaser, although aground and in a sorry state, looked as if she might be salvable, we fired another torpedo and blew his stern off."

On the same patrol Lieutenant Clarabut's submarine sank a torpedo boat and a small transport vessel carrying Japanese troops, and also damaged an enemy minelayer.

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ON A BRITISH AIRCRAFT-CARRIER

H.M.S. *Illustrious* suffered extensive damage by mass-bombing attacks in the Mediterranean and was refitted in American and British shipyards. The above photograph, taken after she had been refitted, shows a corner of the machinery control room, the nerve centre of the ship where the engineer officer of the watch has to check nearly a hundred dials and instruments.

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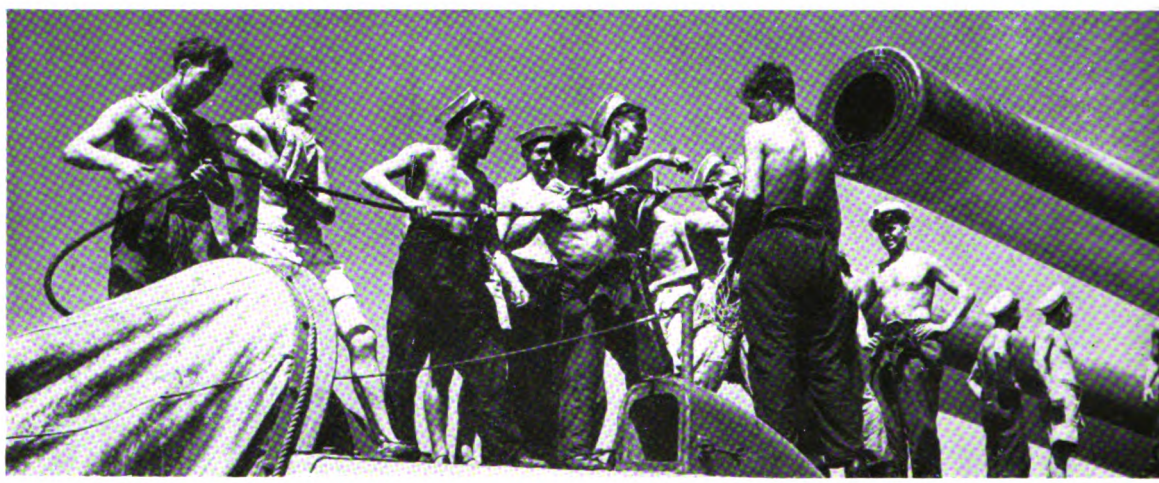
The Japanese were up to all sorts of tricks with camouflage, and their efforts were materially helped by the fact that they were shallow-draught vessels capable of hugging the shore very closely. One of the best Japanese efforts at camouflage was duly detected by a British submarine commanded by Lieutenant A. G. Chandler, R.N.R., who gave this account of the incident :

"I was called to the periscope by the officer of the watch to look at something which he described as 'queer,' and saw what appeared to be an island, with two palm trees and hibiscus and other foliage entwining them. The 'island' was moving rapidly about a mile from us.

"After I had been studying this phenomenon for a while through the periscope a number of heads became visible among the foliage, and I knew then that it was a Japanese landing craft of unusually large size and cleverly camouflaged with bits of the jungle. It turned out to be loaded with stores and crowded with at least 100 Japanese troops.

"We surfaced about a thousand yards on the starboard quarter of 'The Cocoanut Grove,' as we called it, and at once opened fire with our 4-inch gun and Oerlikon. On sighting me the enemy turned hard to port, but the second round of 4-inch hit him right aft. With a terrific explosion the stern of the 'island' blew off, and up went stores and Japanese in a great column of flame.



CLEANING H.M.S. *QUEEN ELIZABETH'S* GUNS

These members of the crew of H.M.S. *Queen Elizabeth* are cleaning the battleship's guns after a practice shoot in Far Eastern waters.

"Japanese troops left in the forward half of the vessel hastily put on their life jackets and jumped overboard. By this time, after continuous pounding by our gun, there was nothing left of the craft, but a sheet of flame over a large area sent up a wide column of smoke 100 feet high. It was obvious that the craft had been carrying a quantity of petrol besides ammunition and other stores and troops."

Our submarines in those waters not only had to be prepared for the most unexpected developments, they also had to work very hard for most of their successes. Witness the occasion on which H.M. submarine *Tantalus*, commanded by Lieutenant-Commander H. S. Mackenzie, D.S.O., R.N., had to stalk an enemy supply ship for 44 hours before being able to reach a favourable position to attack.

"We sighted two ships early one morning, just as we were about to dive for the day," said Lieutenant-Commander Mackenzie afterwards, "One was an escort, and we soon christened her 'Smoky Joe' because of the great black cloud that she pushed out every few minutes. I kept my eye on 'Smoky Joe,' and although there were times during that long chase when we almost lost hope of catching up on the enemy, we eventually got into a firing position forty-four hours after first sighting the enemy, and stopped the ship with a torpedo hit.

"Meanwhile two other escorts had arrived on the scene and they dropped depth charges, but about four hours afterwards we were able to finish the job with another torpedo. Two minutes after that second torpedo had hit the supply ship amidships I was able to raise the periscope and see that the after

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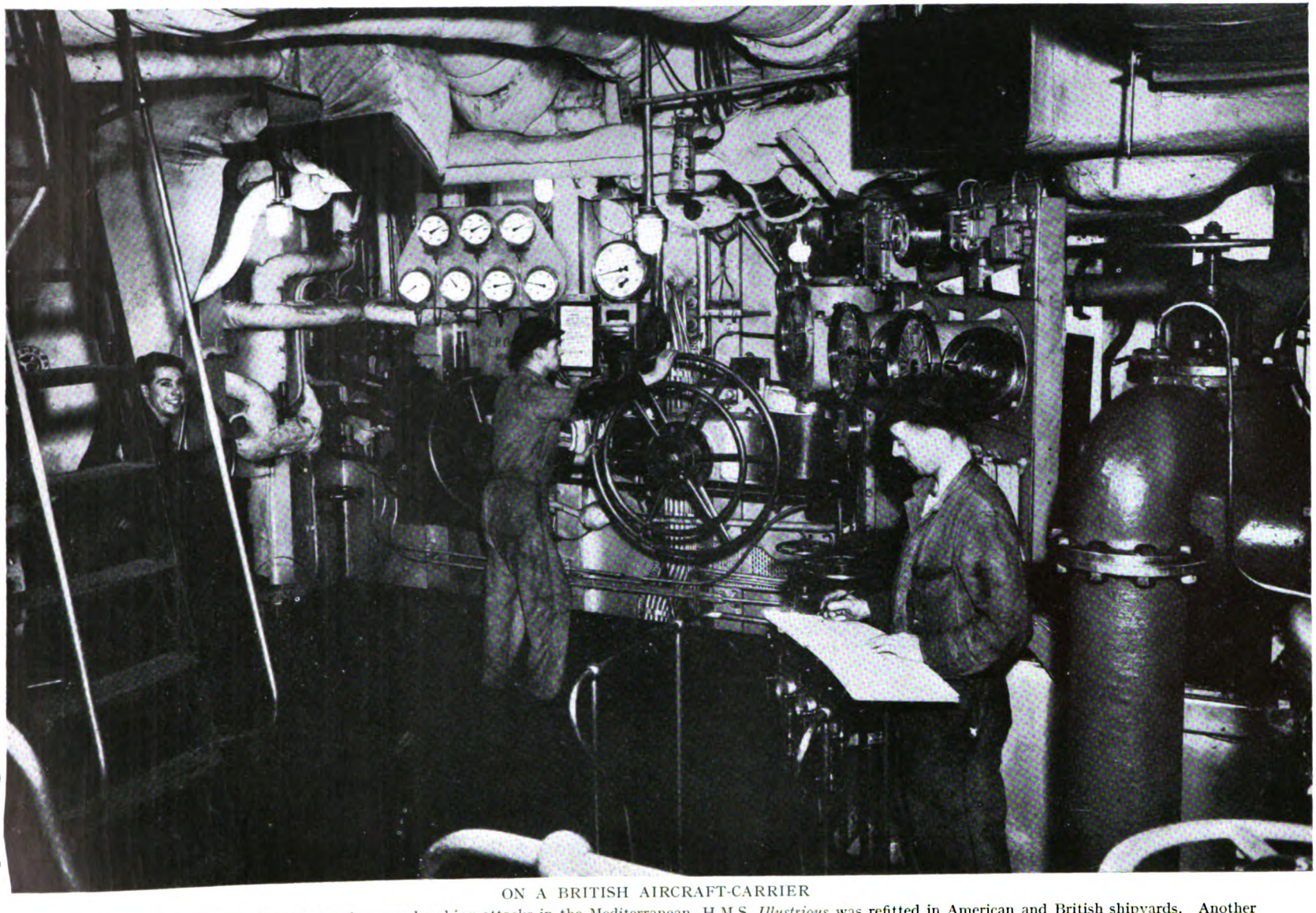

ON A BRITISH AIRCRAFT-CARRIER

After having suffered extensive damage by mass-bombing attacks in the Mediterranean, H.M.S. *Illustrious* was refitted in American and British shipyards. Another photograph, taken after she had been refitted, shows the centre engine-room.

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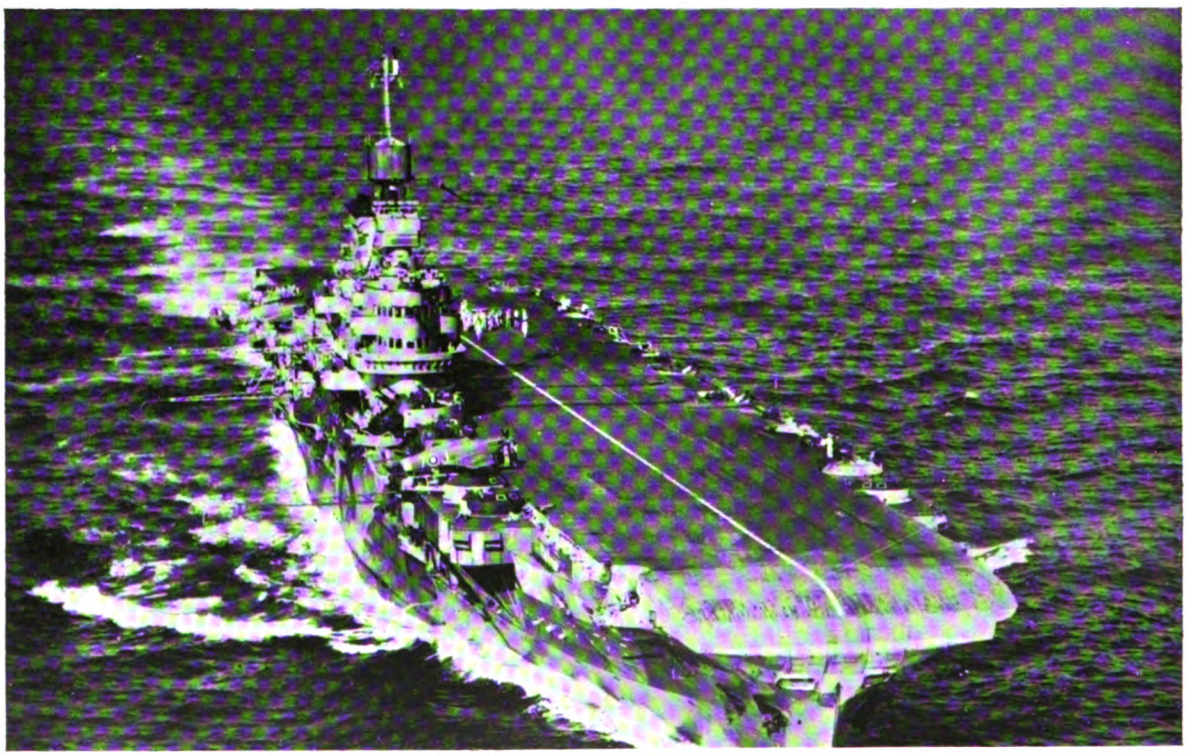
part of the ship had already disappeared and that the other half, sticking up at an acute angle, was settling fast."

Sometimes, however, a submarine was lucky and sighted a target coming towards her just at the right time of day. So it was with the submarine commanded by Lieutenant R. G. Bulkeley, who gave this account of the incident, in which his submarine succeeded in wiping out, for all practical purposes, an entire Japanese convoy.

"We were dived off the north-east coast of Sumatra when we sighted five coasters in line ahead, with an escort vessel ranging up and down between us and the convoy. We immediately went to gun action stations and surfaced. First we engaged the escort vessel, and scored a hit with the second round. She turned towards us and opened fire with a 12-pounder gun, but by the time she had fired one round,



H.M. AIRCRAFT-CARRIER *INDOMITABLE*

A bow view of H.M. aircraft-carrier *Indomitable* taken from the air by one of her aircraft. Completed in 1941, the *Indomitable* has a displacement of 23,000 tons and is armed with sixteen 4.5-in. dual-purpose guns.

which missed us, we had hit her about six times. Her gun never fired again, and after two more hits she was seen to be sinking by the stern.

"We then turned our attention to the coasters, which had opened ineffective machine-gun fire. By the time it had become too dark to continue the action four of the coasters were on the beach, smashed or ablaze, and the fifth was drifting and settling in the water. She was finished off by a boarding party with an explosive scuttling charge."

On another occasion the same submarine attacked a convoy consisting of one tanker and two other ships. The torpedo attack failed, the ships turning away just as the submarine fired. Lieutenant Bulkeley, however, was determined that a tanker should not get away, so he brought his submarine to the surface astern of the convoy and engaged the tanker by gunfire. It was a difficult target, made more difficult because the submarine was rolling heavily in the beam sea, but the tanker was hit by several shells and set on fire. She was left blazing from end to end. One of the other two ships was then engaged and so damaged that she was abandoned by her crew. During this action the third ship of the convoy, as well as a tug and two motor lighters that were in the vicinity, beached themselves in a panic!

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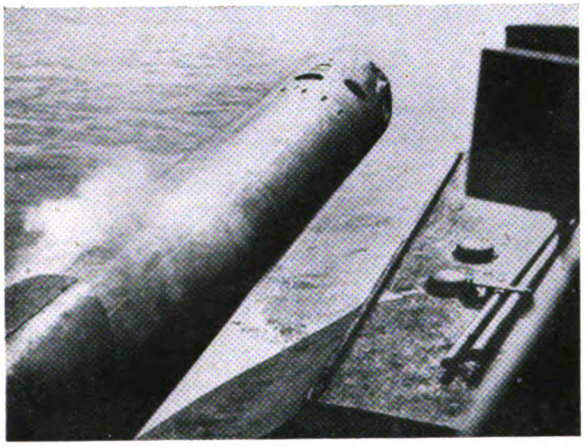

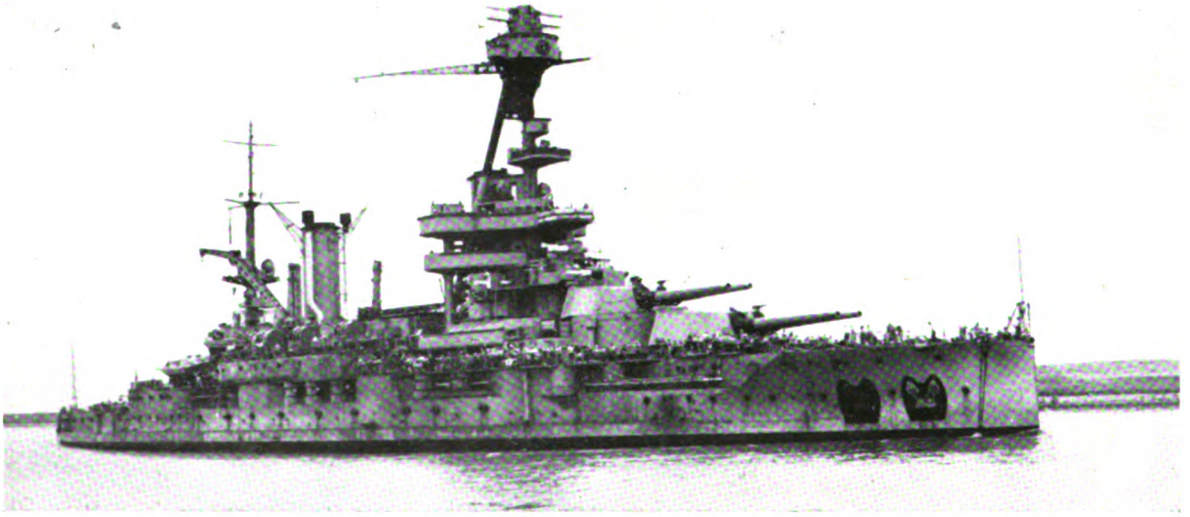

MOTOR TORPEDO BOATS, A CRUISER'S GUNS AND A FRENCH BATTLESHIP

Top, Vosper motor torpedo boats ploughing through the sea at speed; middle left, a 21-in. torpedo being fired from the port tube of a 70-foot Vosper motor torpedo boat; right, H.M. cruiser *Aurora* bombarding Malemo aerodrome, in Crete, at night; bottom, the French battleship *Lorraine*, which was largely reconstructed in 1934–35 and has a displacement of 22,189 tons.

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It was not to be expected that consistent success in a type of warfare involving such tremendous risk could be carried on without loss. There was grievous loss, several submarines never returning from patrol. There were also several cases of escapes which appear to verge on the miraculous.

The case of the submarine commanded by Lieutenant J. A. R. Troup, D.S.C., R.N., was one. That submarine was depth-charged for 14 hours by a considerable force of Japanese anti-submarine craft, including two frigates, but although she was sadly damaged Lieutenant Troup was able to record in the log after much hard work had been done on the sea bed: "Boat more or less back to normal."

The force of Japanese anti-submarine vessels converged on the submarine at dawn and, as Lieutenant Troup put it on his return from this patrol, "We soon realised that we were up against the First Eleven from the Japanese anti-submarine school." Let us follow the story as he told it.

"We went deep and silenced the submarine, but the chasers rushed to and fro above us and dropped pattern after pattern of depth charges. One vessel passed right overhead and dropped a stick of three very close, causing considerable damage. All the lights in the after end and many others went out.

JAPANESE SHIPS IN MANILA BAY FIRED BY U.S. PLANES

A blanket of smoke hangs over a part of Manila Bay as Japanese ships burn furiously following an attack by Admiral Halsey's 3rd Fleet aircraft.

The gyro compass was put out of action and the magnetic compass was also affected. The steering became most erratic. At the same time the Asdic 'blew up' with a spectacular flash; the after hydroplanes jumped 12 degrees out of line; and the hatches lifted off their seatings, but fortunately seated themselves again. A teacup and saucer on the wardroom table jumped about eight inches into the air. The saucer disintegrated in mid-air, but the cup fell down quite intact!

"We lay on the bed of the sea stopped and silent, listening for the Japanese to come back. It was then nearly 14 hours since the Japs had begun to hunt us. Apparently they were satisfied that they had destroyed us, for they didn't come back, and some hours later we came to periscope depth. The periscopes had been damaged and it was difficult to see, but our greatest worry at that time was the very high temperature which our main motors had reached by that time. The motor room had to be evacuated, it was so hot. Most of the crew were beginning to feel really exhausted. Before very long, however, we had the Asdic and the gyro compass repaired and the steering gear working and came to the surface. We got back to our base all right."

A British submarine which endured what was officially termed an "epic ordeal" but was brought safely back to her base was that commanded by Lieutenant D. Swanston, D.S.C., R.N.

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BATTLE AGAINST TROPICAL DISEASE

At the Royal Naval School of Malaria and Hygienic Control in Colombo, Ceylon, medical officers and ratings were trained to combat tropical diseases before being sent away to malarial areas. Ceylon natives often hide water pools with sticks, and this photograph shows a Petty Officer uncovering a pool while a coolie sprays it with a D.D.T. mixture.

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Specially drawn

PRIDE OF THE ROYAL NAVY, H.M.

With the freeing of the British Fleet from duties in the European battle zone and the U-boat war in the Atlantic, many of our warships were sent to the Far East. Among the Royal Navy's aircraft-carriers known to be in the Pacific zone was H.M. aircraft-carrier *Indefatigable*. She is one of Britain's modern carriers, and has sixteen 4.5 dual-purpose guns as her chief armament. Some 760 feet long and with a displacement of 23,000 tons, the *Indefatigable* has four independent engines capable of developing over

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by MONTAGUE B. BLACK, F.R.S.A.

AIRCRAFT-CARRIER *INDEFATIGABLE*

140,000 h.p. and a speed of over 30 knots. Her crew numbers about 1,600, all accommodated in the most up-to-date style, **with** hot and cold water, wireless, and electric heating in every mess, electric cooking, and all the most modern apparatus for **the** treatment of the sick and wounded. In this drawing, our special artist, Montague B. Black, F.R.S.A., shows the *Indefatigable* **with** destroyer escort. Some of her planes hover round her, and in the background can be seen another aircraft-carrier.

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Early in the patrol the submarine had sunk a medium-sized Japanese supply ship. Four days later another supply ship was found and engaged by gunfire, which the supply ship returned with her 12-pounder gun. The submarine scored three hits on the supply ship, and then a Japanese submarine chaser came over the horizon. Lieutenant Swanston decided to dive, but, as he put it, "our luck was out. A shell from the supply ship's 12-pounder gun tore a hole nine inches by four in our pressure hull. Water poured into the engine room and other compartments and we were unable to dive."

So the 3-inch gun, the Oerlikon and the Vickers gun were manned again and the gun duel resumed. Meanwhile Petty Officer Telegraphist V. G. Harmer and Leading Telegraphist K. Wade, on their own initiative, climbed out of the conning tower and down on to the saddle tanks, which were awash, and began trying to plug the hole with blankets.

Four more shells ripped into the submarine, the blast from one of them blowing off Petty Officer

BURNING U.S. AIRCRAFT-CARRIER

The U.S. aircraft-carrier *Suwanee* on fire after being hit by three Japanese bombs during the battle off the Philippines on October 25th–26th. The carrier returned to Bremerton under her own steam for repairs at Puget Sound Navy Yard.

Harmer's boots. But, clinging to the rail to prevent himself being washed away, he continued to hold the blanket in position with his bleeding and badly blistered feet. This he did for twenty minutes, until he was washed away from his precarious handhold. Fortunately, however, the submarine was still sufficiently manœuvrable to enable him to be rescued. Then Harmer and Wade joined the bucket chain which was trying desperately to keep down the water level inside the submarine. An hour later he returned to the bridge and, although he was wounded in both feet and in the left arm, he remained there until nightfall, firing a tommy gun at the Japanese dive bombers which had by that time appeared on the scene.

Meanwhile the Japanese supply ship's gun had been put out of action and she had turned away, damaged and listing to port. But the Japanese submarine chaser took up the fight and continued firing until Lieutenant Swanston was at last able to draw out of range of its guns. The submarine, however, was in a bad way. She was badly holed and unable to dive, the gyro compass had been damaged and

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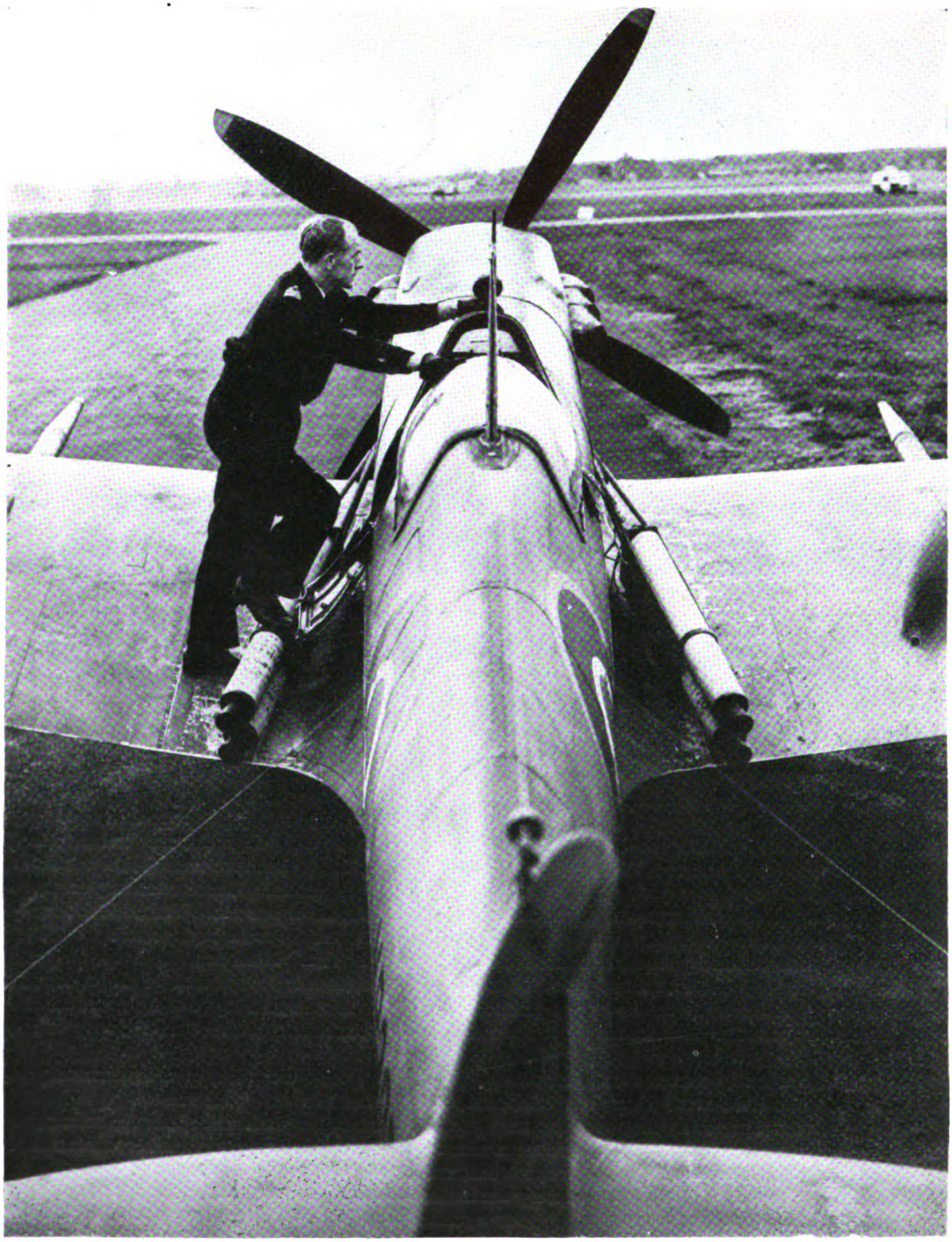

SEAFIRE AIRCRAFT FITTED WITH ROCKET PROPELLANT

In order to provide a speedier take off for carrier-borne aircraft with heavy loads, naval planes are fitted with rockets. This Seafire is fitted with four rockets which propel it into the air when exploded.

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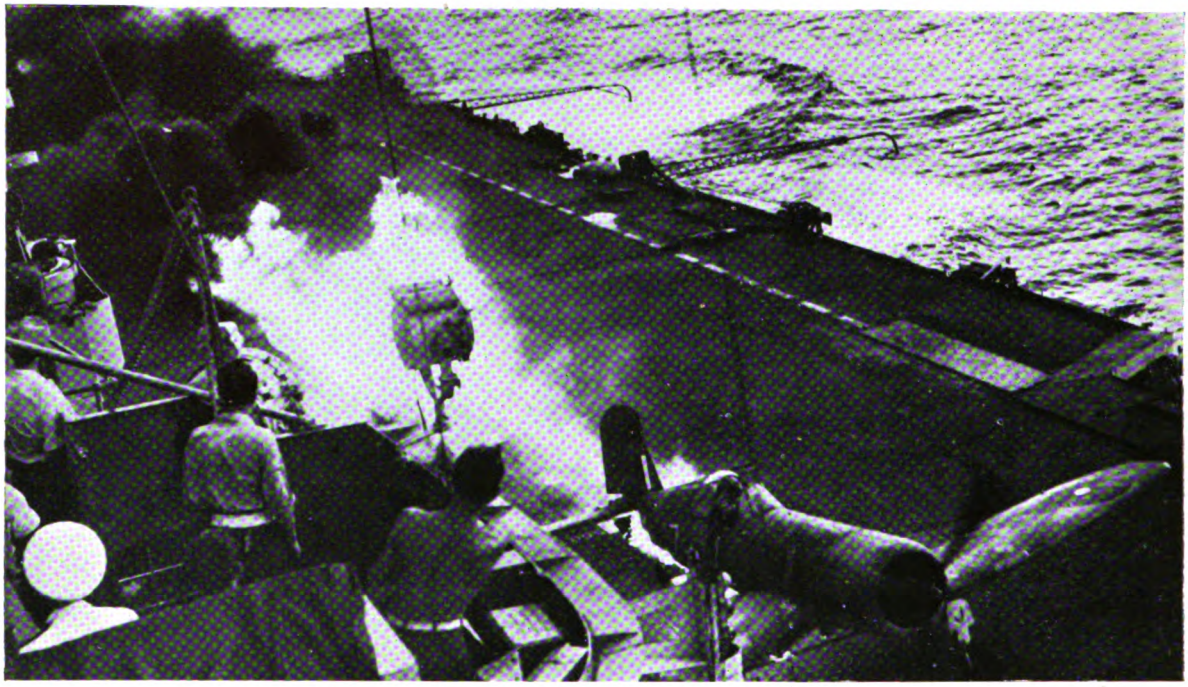

BRITISH AIRCRAFT-CARRIER AT THE ATTACK ON SIGLI

An aircraft-carrier which took part in the attack on the Japanese base at Sigli, in Sumatra. When the Corsair seen in the photograph made an emergency landing its petrol tank became detached and burst into flames, but the fire was soon extinguished.

the diving compass had been hit, so that there was nothing to steer by except "faithful Freddie"—a small portable compass balanced on the knee of the helmsman.

There was nothing for it but to make the best speed possible away from the area, while awaiting the inevitable attacks of Japanese aircraft from the nearby airfields.

Sure enough, at 9.30 a.m. a seaplane started a low-level dive-bombing attack from astern. But Petty Officer Jones at the Vickers gun was ready for it. His first burst forced the aircraft to drop its bomb into the sea 20 yards away, set the aircraft on fire, and sent it spinning into the sea 1,000 yards on the starboard bow. During the next eight hours, until darkness fell, the submarine was attacked almost incessantly from the air. There were 25 separate attacks by bombers and fighter-bombers. The little bridge was flooded several times by the splashes from near-misses. The screen was punctured like a pepper-pot when the submarine was raked by cannon and machine-gun fire. Yet at least four of the aircraft were hit and seriously damaged. The gunlayer and trainer were both wounded. Their places were at once taken by the First Lieutenant and a Telegraphist. Then two others of the gun's crew collapsed, hit by splinters from a 1000-lb. bomb. Other men took their places. Still the bombs rained down and still the Japanese machine guns clattered, but the submarine's guns continued to fire back. Even the wounded down below helped to reload pans of ammunition and pass them up to the guns.

The air attacks finally ceased soon after sunset. The submarine's crew had been continuously in action for nearly twelve hours. There had been sixteen casualties, two of them fatal.

Weary and short-handed as the survivors were, there was much for them to do, for the submarine was in a serious plight. Her port engine and main motors were out of action, as well as her wireless and her compasses. Besides the rent in her pressure hull, she had a hole in her gun tower and another in her port main ballast tank. There were nearly six inches of water in the control room and the upper conning tower hatch was jammed open. At dawn makeshift repairs were started, as the submarine made what speed she could to put the greatest possible distance between herself and the Japanese air bases.

Two nights later there was a strange meeting. Lieutenant Swanston had been firing Very Lights in the hope of attracting the attention of another British submarine which was known to be in the vicinity.

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Suddenly Lieutenant Swanston sighted a light to the westward. He made the correct recognition signals. The commanding officer of the other submarine—Lieutenant G. S. Clarabut, who is a great personal friend of Lieutenant Swanston—was taking no risks. It might be a Japanese trap, so he flashed the signal:

"What is the christian name of your wife?"

Lieutenant Swanston at once flashed back: "Shiela—and your wife's christian name is Stella."

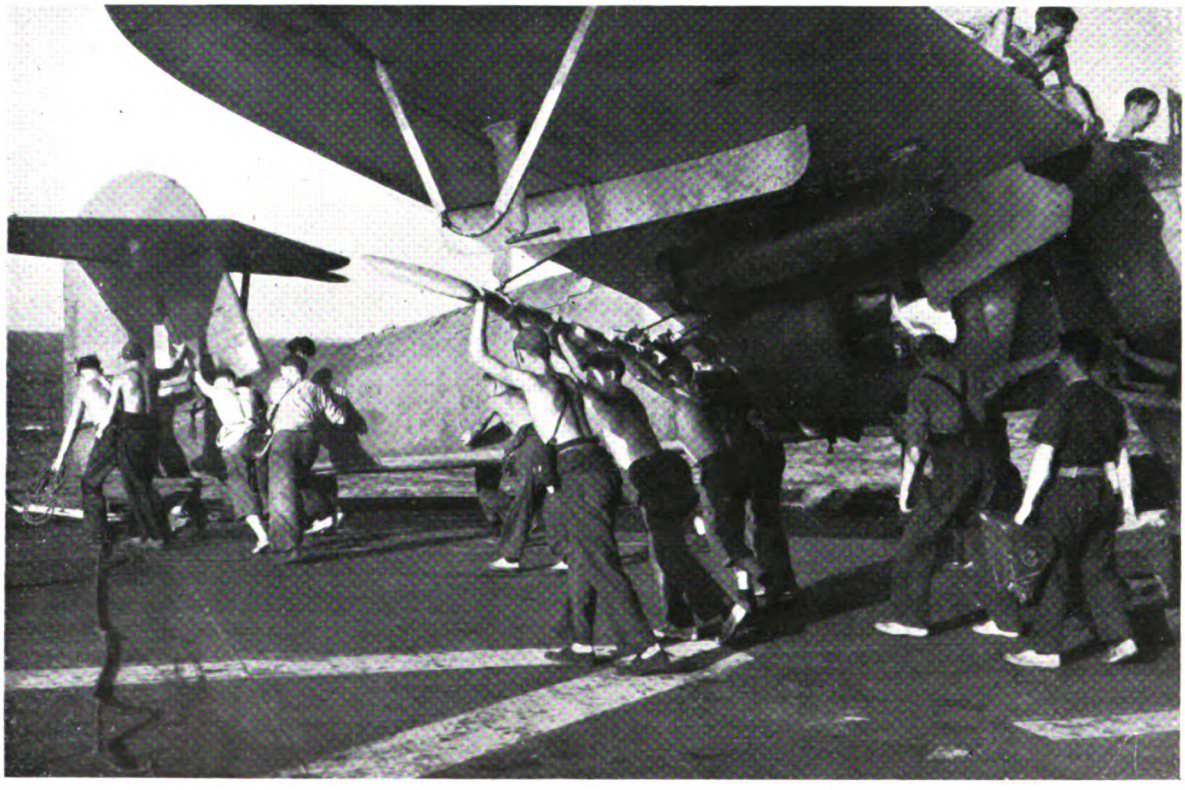
"That was just for good measure," said Lieutenant Swanston afterwards.

Friendly relations having thus been established, the damaged submarine was duly taken in tow by her sister ship and both reached their base safely in due course.

Of all the amazing exploits for which British submarines have been responsible in all theatres of war there can be nothing to equal the attack by a British midget submarine on a big 10,000-ton Japanese cruiser—the *Takao*—while she was lying in the fancied security of Singapore harbour.

The midget submarine which performed this great feat was XE.3, commanded by Lieutenant Ian Edward Fraser, D.S.C., R.N.V.R. In order to reach the place where the Japanese cruiser was lying the midget submarine had to make a long and highly dangerous passage through heavily mined waters and an area which was closely patrolled by aircraft as well as surface vessels. Twice during that passage the tiny submarine was forced to dive in among the mines, but she got through and, after an arduous and hazardous trip of eleven hours, she succeeded in slipping through the boom gate which guarded the entrance to the Johore Strait. As XE.3 slipped through the boom, Lieutenant Fraser risked a quick look through the periscope to make sure that he was in the correct position. The periscope broke the surface of the water for only five seconds—long enough for Fraser to see where he was—and incidentally to find himself looking into the faces of two grinning Japanese sailors who were leaning over the rail of one of the boom defence vessels. Fortunately the periscope disappeared before either of the Japs spotted it.

Stealing into the harbour, Lieutenant Fraser made out the Japanese cruiser while he was still a mile



FLEET AIR ARM ATTACK ON PADANG

A deck party handling a Barracuda on the flight-deck of one of the aircraft-carriers which took part in an attack on the large Indaroeng cement plant, near Padang, and Emmahaven, the port of Padang.

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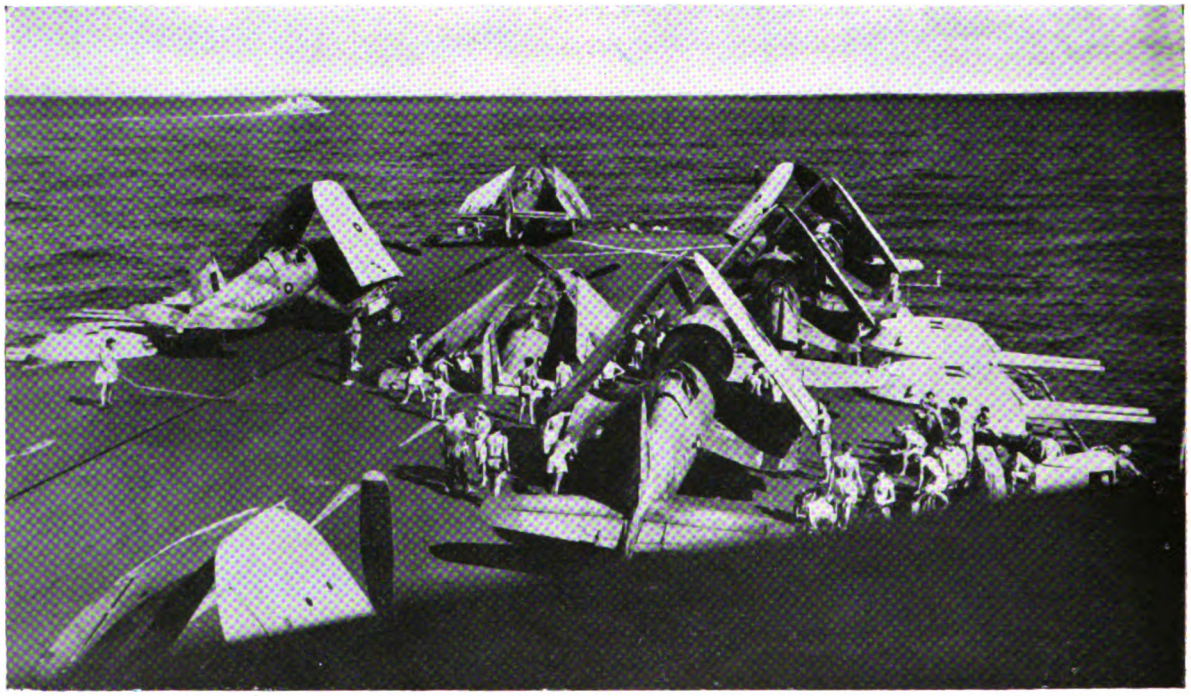
and a half from her. She was very well camouflaged and was lying with her stern to the shore and so close in that it was at once obvious that she must be very nearly resting on the bottom. This made the attack even more difficult and dangerous, for to be successful the midget submarine had to get under the cruiser. Lieutenant Fraser did not hesitate. He worked his craft along the sea bed until his bows touched the cruiser amidships. Then he succeeded in forcing XE.3 under the keel of the cruiser. He had reached the position for attack, but now found that the midget submarine was so tightly jammed between the sea bottom and the keel of the Japanese cruiser that the hatch would not open fully. For a moment it seemed that the attack—which consists of fixing magnetic "limpet" charges to the bottom of the enemy ship by means of a diver—could not be carried out.

After some difficulty, however, Leading Seaman James Joseph Magennis, the submarine's diver, managed to squeeze himself out through the half-open hatch. He then prepared to fix the six "limpet" charges against the bottom of the Japanese cruiser's hull. The cruiser's bottom, however, was so foul that the "limpets" would not adhere to it.



AVENGER BOMBERS ON THE FLIGHT-DECK

The flight-deck of a British aircraft-carrier showing Avenger bombers coming up on the elevator. These aircraft, together with Corsair and Hellcat fighters, attacked the enemy-held harbour of Ballawan Dli, in Sumatra.

Working in conditions of the utmost danger and difficulty, Leading Seaman Magennis set to work to scrape several years' growth of seaweed and barnacles off the cruiser's hull. It took him three quarters of an hour to scrape a sufficient area of the hull and fix five of the "limpets." The sixth "limpet," in its carrier, had become jammed against the hull of the submarine and he could not move it.

Magennis then returned to the submarine. He was exhausted and could struggle no more without a rest. The rest which he took was short—there was little time to be lost. The "limpets" which had been fixed to the cruiser's hull had time fuzes, and the midget submarine had to get away before they exploded. But there was still that "limpet" jammed on the submarine. It was dangerous and could not be jettisoned.

Having had a short rest Magennis again went out of the submarine and, armed with a large spanner, he succeeded in getting the "limpet" free of the submarine. It was hard and hazardous work, done under appalling conditions, but it was successful, and when Magennis had regained the submarine for the second time, XE.3 was free to make the best of her way out of a very tight corner. This Lieutenant

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THE FAIREY FIREFLY IN FLIGHT

The Fairey Firefly, a British naval fighter reconnaissance aircraft, in flight. Powered by a Rolls-Royce Griffin engine, which drives a Rotel four-bladed constant speed propeller. It can carry eight pairs of rockets or two 1,000lb. bombs under its wings. In addition it has four 20-mm. guns in the wings and folding wings for stowage in aircraft-carriers.

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Fraser successfully did, and both he and Leading Seaman Magennis were subsequently awarded the Victoria Cross.

Rear-Admiral James Fife of the United States Navy, who was commanding the submarines of the Seventh Fleet, under whom the British midget submarines in those waters were operating, went from his headquarters in Subic Bay, Luzon, to Brunei Bay, Borneo, the British midget submarine base, for this attack. When he was later advised as a result of air reconnaissance of the success of this attack, he signalled his congratulations and added: "As an exhibition of sheer guts this is hard to beat."

Another highly successful midget submarine operation carried out in the Far East was the cutting off of the Japanese Saigon-Hong Kong and Saigon-Singapore undersea telephone cables. This proved to be a highly dangerous operation, which had to be carried out in much deeper water than had been anticipated. It was, however, successfully accomplished, but not before two highly trained divers of the Royal Navy had lost their lives in one attempt.

CHAPTER XII

THE seaborne assault on Rangoon on May 2nd, 1945, and the recapture of that great port which resulted from those operations, may be taken as marking the virtual end of the Burma campaign and a stride of immense importance towards the final defeat of Japan. In Burma, mopping-up operations, of course, continued for some time, but the freeing of Rangoon set a short term to any organised Japanese resistance in Burma.

The assault on Rangoon was a great amphibious operation, and it involved naval and naval air

AIRCRAFT-CARRIER FIRING ON ATTACKING BOMBERS

A plume of water is thrown skywards, covering the stern of a U.S. aircraft-carrier, as a bomb dropped by a land-based Japanese plane explodes near by. The guns of the carrier in the foreground have opened up on the attacking bombers.

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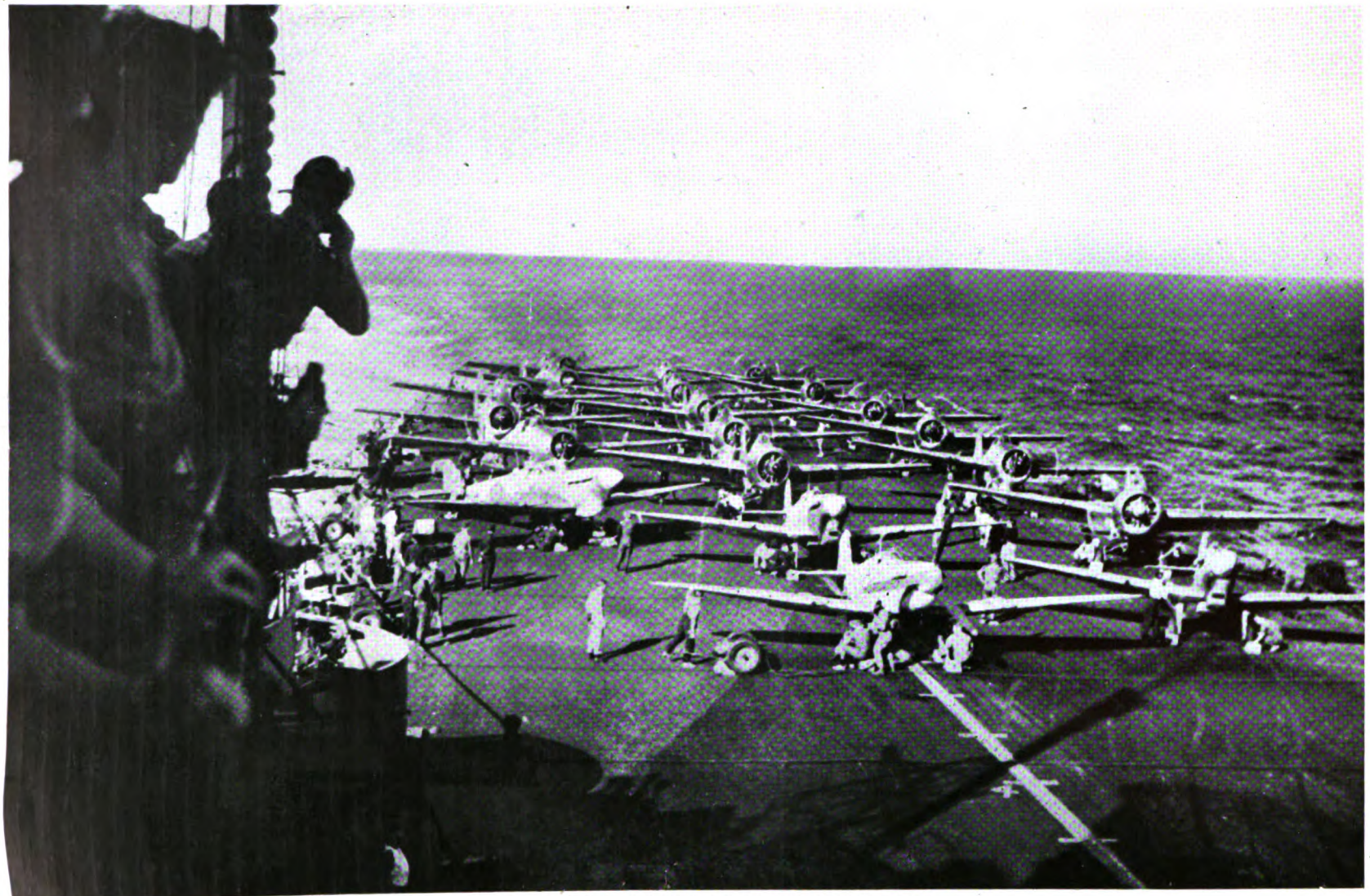

SEAFIRES AND WILDCATS ON THE FLIGHT-DECK

H.M. aircraft-carrier *Formidable* with Seafire and Wildcat aircraft ranged on her deck. The *Formidable*, launched towards the end of 1939 and completed in 1940, has a length of 753 feet and a displacement of 23,000 tons, and carries sixteen 4.5-in. dual-purpose guns.

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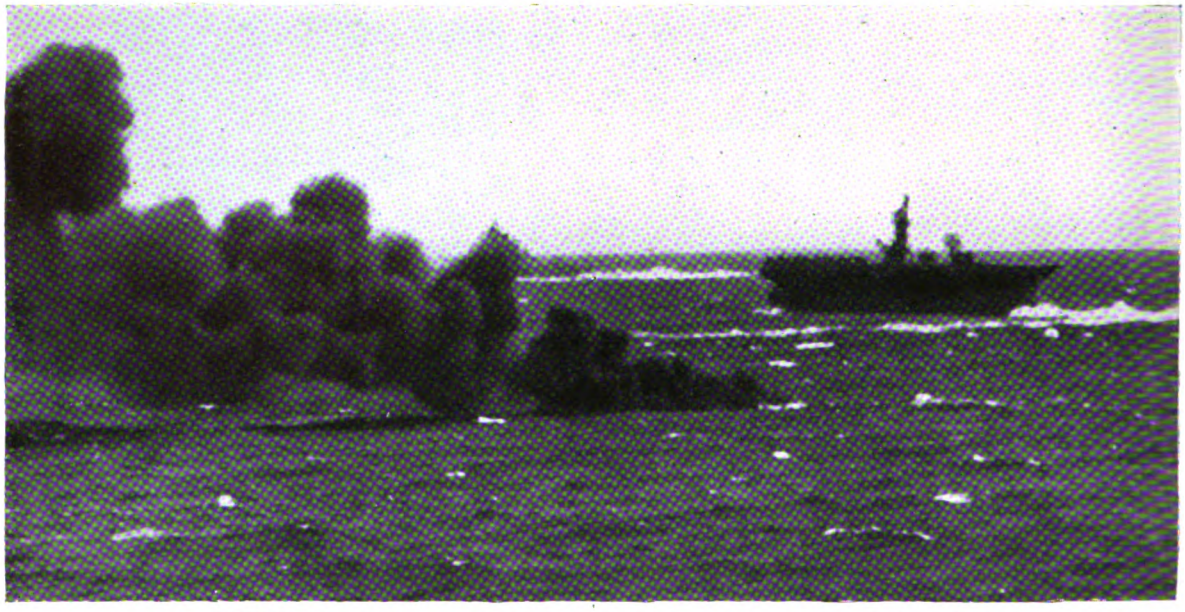

ENEMY AIRCRAFT BROUGHT DOWN WHILE ATTACKING A CARRIER

The drift of black smoke in the foreground marks the end of a Japanese bomber shot down when attacking the American aircraft-carrier *Princeton* in the battle of the Philippines. On the right a sister ship of the *Princeton* is seen shifting her helm rapidly to avoid other planes.

operations over a very wide area, which were carried out in order to prevent Japanese interference with our landings and their consolidation. Having regard to the range of these operations and the fanatical nature of the Japanese, it seems amazing that, out of the great force of warships which were involved, not one suffered any damage or a casualty at the hands of the enemy. One aircraft was lost in the whole series of closely co-ordinated operations—that was all.

This series of bombardments and strikes by carrier-borne aircraft was carried out by battleships, cruisers, destroyers and aircraft-carriers. This strong covering force was under the command of Vice-Admiral H. T. C. Walker, C.B., and included the battleship H.M.S. *Queen Elizabeth* and the French battleship *Richelieu*; the cruisers H.M.S. *Suffolk*, H.M.S. *Ceylon* and the Netherlands cruiser *Tromp*; and the destroyers H.M.S. *Rotherham*, H.M.S. *Paladin* and H.M.S. *Penn*. Aircraft of 804 Squadron and 851 Squadron of the Fleet Air Arm were among those operating from the aircraft-carriers.

This covering force carried out a series of raids by aircraft and bombardments of enemy-occupied ports, airfields and shipping in the Andaman Islands, the Nicobar Islands, and all along the Tamasserim coast—which is the stretch of the coast of Burma running southwards from Rangoon to the Kra Isthmus of the Malay Peninsula. These attacks had the dual objective of ensuring that there should be no Japanese interference from outside in our operations in the Rangoon river, and of preventing the evacuation of Japanese forces by sea.

These "covering" operations began on April 30th. On that and the following day the Japanese airfields at Car Nicobar and at Port Blair in the Andaman Islands, as well as the harbour at Port Blair, were subjected to heavy bombardments from the ships and from naval aircraft. As a result runways at the airfields were left pitted by craters, aerodrome buildings were destroyed, and large petrol fires started, while much damage was done to the harbour installations at Port Blair. Vice-Admiral Walker could say with confidence that these two Japanese air bases, lying some 400 miles off the Tamasserim coast, would be virtually useless, at least for a few vital days.

On May 3rd the aircraft-carriers were operating off the Tamasserim coast, and there the naval aircraft damaged and drove ashore a coaster in the Tavoy river. Next day, May 4th, the aircraft "strafed" the Japanese airfields at Mergui and Victoria Point.

By that time it was known that the landing operations at Rangoon had been successfully carried out and that the beachheads were being rapidly consolidated. The assault force, under the command of Rear-Admiral B. C. S. Martin, C.B.E., D.S.O., had included a large number of landing craft of specially

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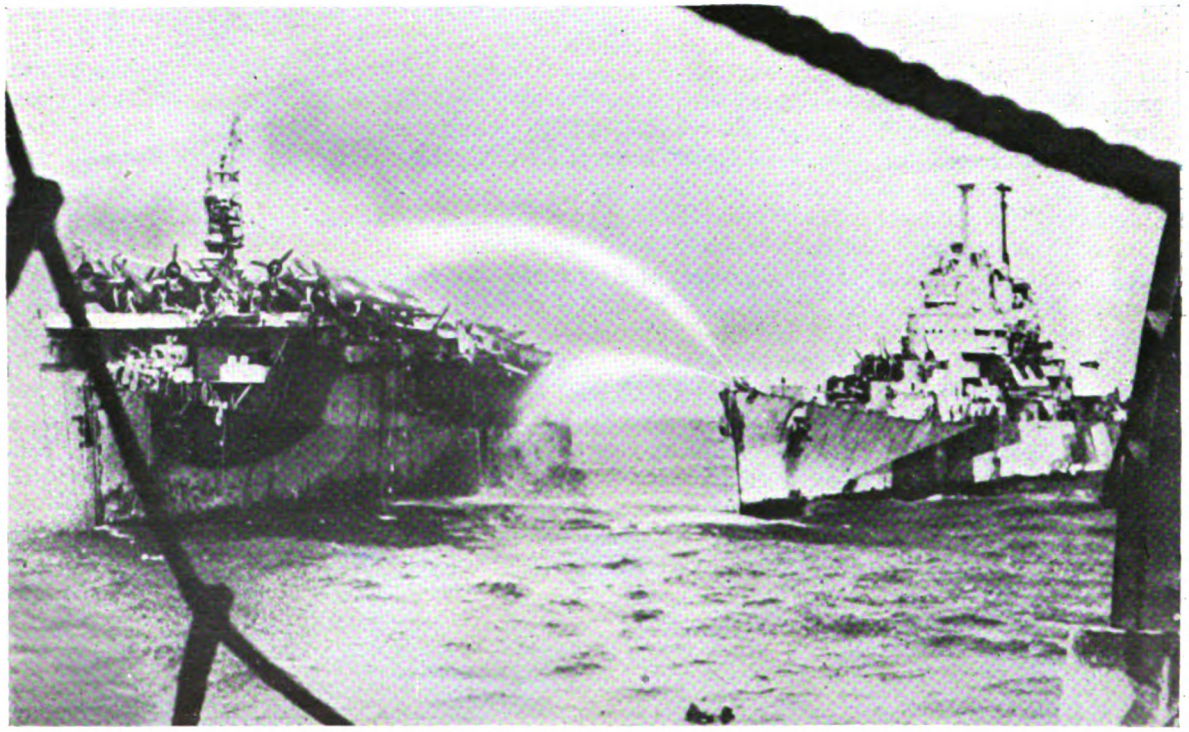
evolved types. These had effected the landings under the guns of the supporting craft, which included the sloops *Sutlej* and *Cauvery* of the Royal Indian Navy and H.M. frigates *Trent* and *Lossie*, and under the protection of Fleet Air Arm fighters operating from a force of aircraft-carriers under the command of Commodore G. N. Oliver, C.B., D.S.O. The aircraft-carriers, of course, had an escort of destroyers. The landing force was preceded by minesweepers, and Light Coastal Forces were also present. A Fleet Train of supply ships was in attendance upon the operation :

Meanwhile destroyer patrols had been established in the Gulf of Martaban to cover the rear of the landing and the "build up," and also to help prevent a Japanese evacuation by sea. These destroyer patrols were operated under the command of Commodore A. L. Poland, C.B., D.S.O., D.S.C., and they proved very valuable. The destroyers H.M.S. *Roebuck*, H.M.S. *Racehorse*, and H.M.S. *Redoubt* of this patrolling force sank ten small coastal craft which had slipped out of Rangoon river and were trying to reach Moulmein.

Once the Rangoon landing was established, more aircraft could be spared to operate against Japanese shipping to the southward. On May 5th and 6th they carried out further "strikes" between Mergui and Victoria Point. They sank a number of barges and lighters, and two small supply ships loaded with oil were left in flames. The jetties and warehouses at Mergui also came in for attention and were thoroughly bombed and shot up.

While these "strikes" were in progress the covering force was again busy, making sure that the Japanese bases at Port Blair and Car Nicobar should not "come to life." Port Blair was again bombarded from the sea on May 6th. The main objectives for the guns of the ships were the port installations and the anti-aircraft batteries. While the latter were fully occupied by this naval bombardment aircraft of the Fleet Air Arm again arrived on the scene and went in to "strafe" shipping in the port. This they did with great effect. A number of vessels and a jetty were left in flames.

Next day it was again the turn of the Japanese air base on Car Nicobar. In a highly successful attack by the carrier-borne aircraft the airfields, buildings, vehicles and personnel were shot up with considerable effect. Thus both Port Blair and Car Nicobar continued to be useless to the Japanese



SINKING OF THE U.S. AIRCRAFT-CARRIER *PRINCETON*

A U.S. Pacific Fleet cruiser pouring a stream of water into the aircraft-carrier *Princeton*, which was hit and set on fire during the air-sea battle of the Philippines. The *Princeton* eventually sank.

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U.S. DESTROYER ON FIRE

A gigantic column of black smoke rising from a bombed American destroyer in Leyte Gulf. The white smoke on the left is billowing from a destroyed enemy aircraft.

while the big combined operation in the Rangoon river was going on 400 miles behind the "outpost front" which they represented.

Although the recapture of Rangoon marked the decisive end of one phase of the war in that area, there was still much to be done at sea. This fact was underlined only a fortnight after the landing operations in the Rangoon river, when one of Japan's most formidable heavy cruisers fell victim to a division of British destroyers in the northern part of the Malacca Strait. Since this cruiser was steaming on a south-easterly course and was accompanied by a destroyer, while a supply ship and a submarine chaser were also sighted in the vicinity, it would seem that these Japanese vessels were trying to make good their escape from Sabang or the Nicobar Islands, both of which were becoming increasingly dangerous for the Japanese in view of the repeated attacks of the East Indies Fleet and its aircraft.

The manner in which this action came about is curious. An aircraft from the escort aircraft-carrier H.M.S. *Shah*, which had gone out on reconnaissance patrol, had not returned to the carrier, and it was believed that it had made a forced landing in the sea. In such a case the crew would have been in their rubber dinghy in the northern part of the Malacca Strait. Lieutenant-Commander M. T. Fuller, R.N.V.R., who commanded the squadron, set out himself to search for the rubber dinghy. It was while he was engaged on this search that he sighted the Japanese cruiser—one of the big ships of the Nachi class. Reluctantly, he abandoned his search for the dinghy and, having reported the enemy cruiser, set about shadowing it and reporting its movements. That was his obvious duty. He continued to shadow and report the movements of the enemy until his reserve of petrol was barely sufficient to enable him to regain his carrier. The Admiralty stated afterwards that it was largely due to the coolness and skill of Lieutenant-Commander Fuller and his accurate shadowing and reporting that units of the East Indies Fleet were able to seek out, engage, and sink the Japanese cruiser about fifty miles west-south-west of Penang.

Immediately on receipt of Lieutenant-Commander Fuller's report of sighting the enemy cruiser an air striking force was sent out to attack. This attack was well carried out in face of intense anti-aircraft fire and it was considered that one bomb hit had been scored on the ship, while a very near miss was also observed.

Meanwhile a division of destroyers, led by Captain M. L. Power, C.B.E., D.S.O., R.N., in H.M.S. *Saumarez*, and consisting, in addition to that ship, of H.M.S. *Venus*, H.M.S. *Virago*, and H.M.S. *Verulam*, dashed into the Malacca Strait at full speed in the hope of being able to intercept the powerful Japanese cruiser and bring her to action. The destroyers mounted no gun larger than 4.7-inch to match against the Japanese 8-inch guns, but there was no hesitation. The destroyers had already worked out and practised a plan of action for just such an eventuality. As the Commanding Officer of H.M.S. *Venus* said afterwards: "The success of the operation was largely due to the fact that the flotilla had previously worked out a "set piece" plan for just such an operation. We had practised the plan many times. Luck was with us, and our plan and practice achieved success."

Here was history repeating itself. One remembers how Commodore Harwood led his cruisers against a far more powerful enemy at the Battle of the River Plate in accordance with a carefully worked out plan which the British ships had practised many times before they met the German "pocket battleship" *Admiral Graf Spee*.

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WAR IN THE PACIFIC

Two memorable days in Australia's history was the arrival of a part of Britain's naval might at Sydney. The above, taken from an aircraft-carrier, shows the scene in Woolloomooloo Bay. In the right background is H.M.S. *King George V* with a cruiser and two destroyers.

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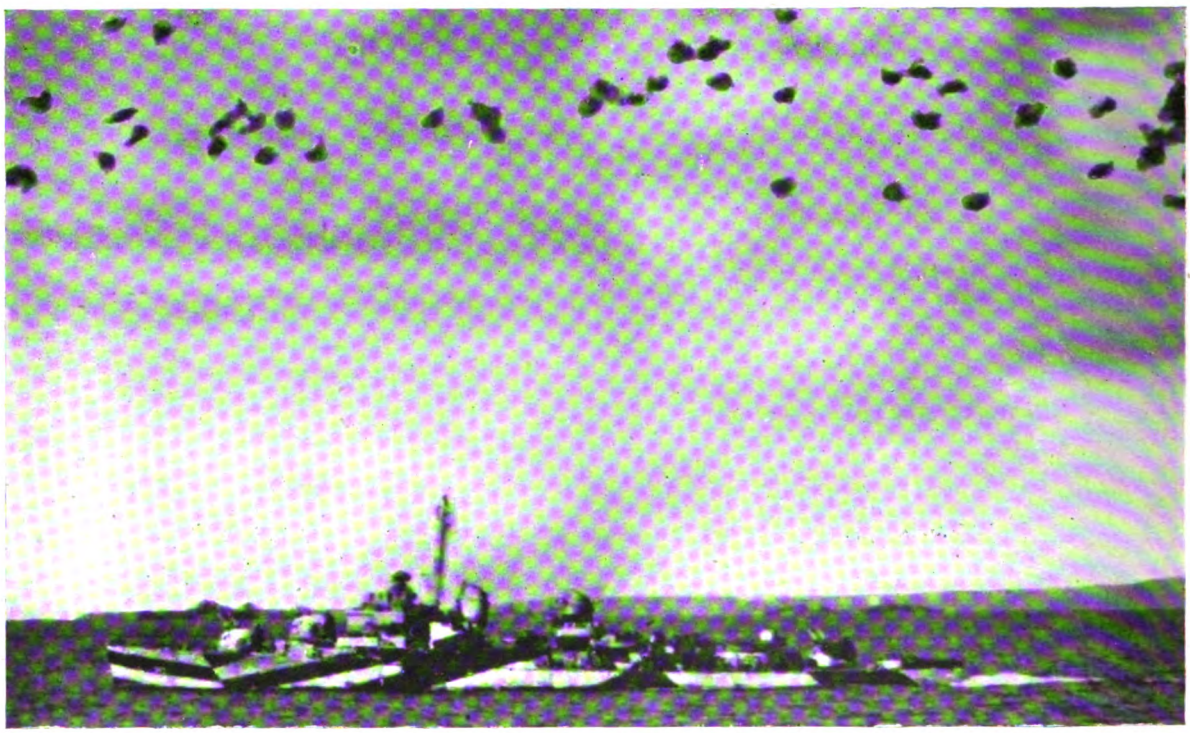
It was just after midnight when the British destroyers first made contact with the enemy cruiser, but the ships were almost immediately engulfed in a series of heavy tropical rain squalls which reduced visibility to a few yards. Then they cleared, and the big cruiser could be seen silhouetted against the vivid flashes of tropical lightning. H.M.S. *Saumarez* dashed in and fired torpedoes, but the enemy saw the manœuvre and was able to turn sharply to the southward in time to avoid most of them. But not all. There was a brilliant flash from her stern as one of them hit and exploded. The other destroyers at once illuminated the Japanese ship with starshell and opened fire with all guns. They began hitting at once. Then H.M.S. *Venus* fired torpedoes, and scored at least one hit on the enemy. Seven minutes later Captain Power signalled to H.M.S. *Venus*, the ship which was most advantageously placed, "Finish her off." H.M.S. *Venus* closed in and fired her remaining torpedoes. They hit and there was a tremendous explosion, followed by an intense fire on board the cruiser. Almost immediately, she sank.

Searchlights from H.M.S. *Venus* were switched on to the blazing hulk of the Japanese cruiser as she



THE ASSAULT ON MINDORO ISLAND

Anti-aircraft bursts dotting the skies over the landing area during the first stages of the Allied attack on Mindoro Island, in the Philippines. A 2,200-ton U.S. destroyer is seen in the foreground firing at Japanese aircraft.

sank. It could be seen that a pinnace had been lowered into the water and was packed with men—probably high-ranking Japanese officers. The sea was full of men swimming or clinging to bits of wreckage, but no attempts at rescue could be made. The destroyers were very close under the enemy-occupied coast and close to Japanese air bases. It was imperative that they should get out of the Malacca Strait and away to the westward before daylight.

It was a highly successful night's work, and it is worth remarking that the last occasion on which H.M.S. *Saumarez* and H.M.S. *Virago* had been in action against a powerful enemy surface ship was when they took part in the sinking of the German battle-cruiser *Scharnhorst* in the Arctic in December 1943.

Even if it had not been for the proximity of Japanese airfields, it is doubtful whether the British destroyers could have rescued any of the crew of the cruiser. Experience had shown that the fanaticism of the Japanese was such that most of them would commit suicide in order to avoid capture, while all manner of tricks were to be expected.

These had been demonstrated a few weeks before when destroyers of the East Indies Fleet had intercepted a Japanese convoy in the Andaman Sea. The convoy consisted of one large and one medium

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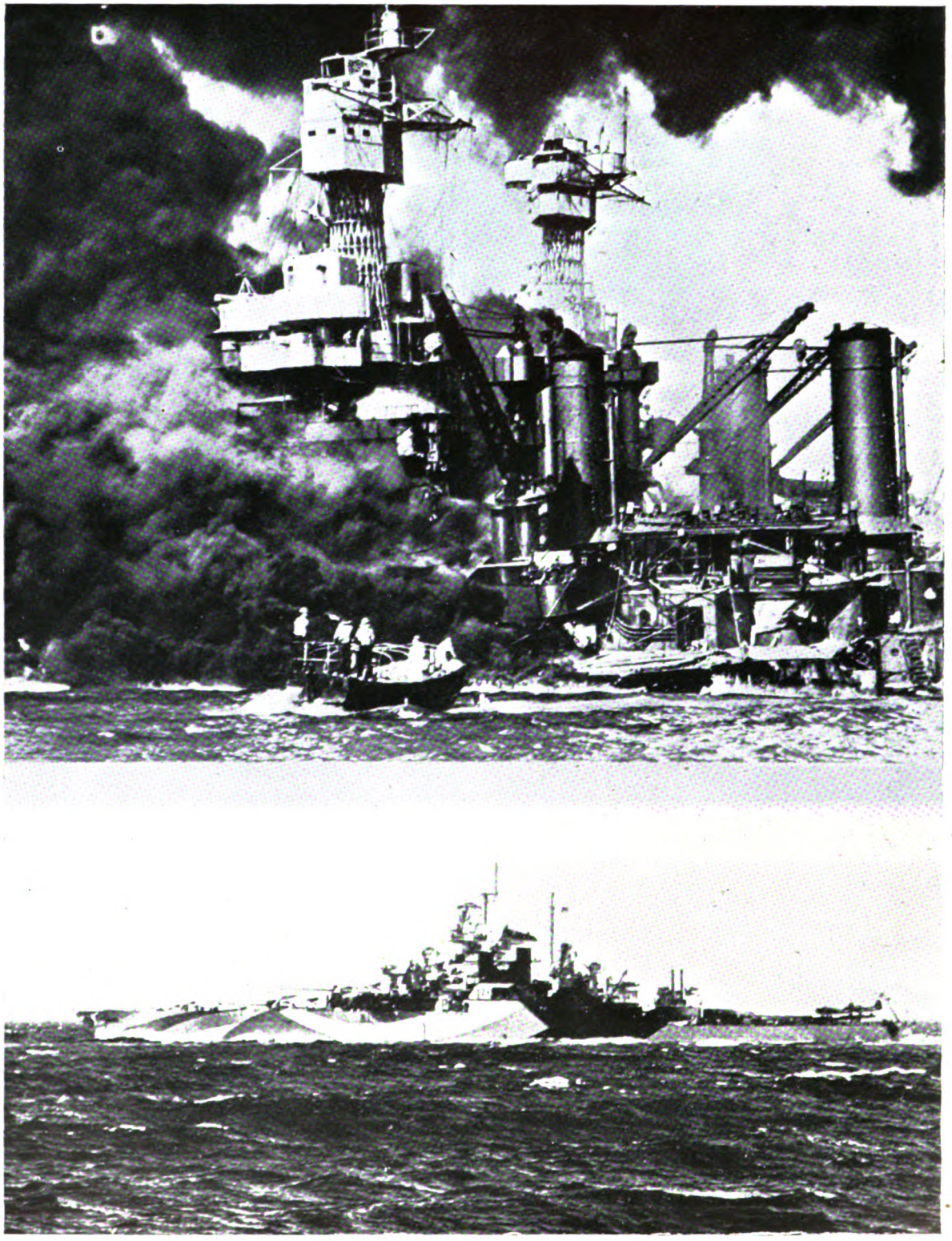

THE U.S. BATTLESHIP *WEST VIRGINIA*

When the Japanese made their treacherous attack on American warships in Pearl Harbour the *West Virginia* was among those that received damage. In the upper photograph she is seen shortly after the Pearl Harbour onslaught and in the lower picture as she appeared after refitting and reconstruction.

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Specially drawn

GIBRALTAR OF JAPAN GETS A HAMMERING

Truk the great enemy naval base which, with its garrison of 40,000, has been called the Gibraltar of Japan, was severely damaged by units of the British Pacific Fleet in a bombardment which lasted for 48 hours. The British force arrived on the scene just before dawn on June 15th, 1945, and our aircraft—Avenger bombers of Fleet Air Arm, supported by Firefly and Seafire fighters—proceeded to attack coastal guns, wireless and oil installations, shipping, and submarine and seaplane bases, keeping up the assault with 500-

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by MONTAGUE B. BLACK, F.R.S.A.

FROM THE BRITISH PACIFIC FLEET

pounder bombs, rockets and cannon fire, for two whole days and nights. Altogether they made 216 sorties with the loss of only one Seafire. On the morning of June 16th cruisers supported by destroyers closed in on the outer reef to some 8,000 yards range and pounded the Japanese installations. In this drawing our special artist, Montague B. Black, F.R.S.A., gives an impression of the great attack, which must have gone a long way toward neutralising the effectiveness of this powerful enemy fortress in the Pacific.

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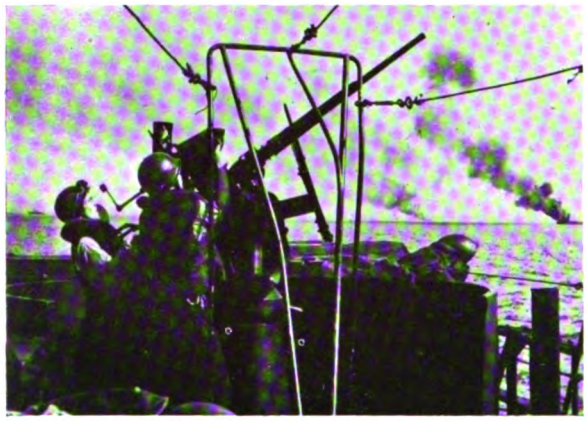

ATTACKING JAPANESE AIRCRAFT
The crew of a 20-mm. anti-aircraft gun aboard a U.S. LCI about to fire on enemy aircraft off Mindoro Island.

sized supply ship, escorted by two submarine chasers. They were sighted by the destroyers in broad daylight, and the British ships opened fire at once at extreme range, closing rapidly in on the enemy as they fired. After repeated hits on the first submarine chaser there was a heavy explosion aft, which blew the stern of the vessel right up into the air. By some freakish chance the stern of the vessel came down on her bows, where it lodged and remained until the rest of the ship rolled over on her beam ends and sank. The British ceased fire as they saw that the ship was doomed, but they had to reopen fire on the hulk, lying almost on her side, because members of the Japanese crew had clambered on to the upper side of the sinking ship and were sniping with small arms. The large supply ship was engaged and severely damaged by gunfire, and then finished off by a Liberator aircraft which was in the vicinity. The smaller of the supply ships was sunk by gunfire, and the remaining submarine chaser was sunk by torpedo.

As the destroyers were manœuvring to pick up survivors a Japanese in the water was found to be hammering on the hull of one of the ships with a fuzed pom-pom shell in the hope of blowing a hole in the ship's side, and blowing himself up at the same time. Other cases of fanaticism were detailed by the First Lieutenant of one of the destroyers, who went away in a whaler to try to pick up survivors: "We managed to haul five badly wounded Japanese on board, although one of them tried to swim away. We then came across two men on a Carley raft. On seeing us approaching, one held out at arms length a sword bayonet about three feet long and, after three attempts, succeeded in plunging the point into his throat. The second had a short bowie-knife. I raised my revolver to try to shoot it out of his right hand, but he deftly transferred the knife to his left hand and, with a swift movement, he cut the jugular vein in his neck. I will never forget the look of surprise on his face when he found that it hurt him. Another Jap dived under water when he saw us coming, and a big air bubble was the last sign we saw of him. We came across two more shamming dead with their faces in the water, their mouths twisted to one side. When they thought we weren't looking they quickly turned their heads and snatched a breath. I saw one man lashed by about 30 turns of rope to the mast of one of the submarine chasers. He was probably the captain, making sure that he went down with his ship. He was badly shot up, as the mast was riddled. It had toppled overboard about ten minutes before the ship had sunk."

The large number of operations carried out in the Indian Ocean and Bay of Bengal during the first months of 1945, and the large forces involved in many of these operations, may well give the impression that the enemy had been effectively swept from the waters outside the Malacca Strait and the coastal waters immediately to the north of it. So far as enemy surface ships were concerned, this was certainly true, but never for a moment could vigilance be relaxed in any part of the vast expanse of water which stretches from the Dutch East Indies to the coast of Africa. Not only were there Japanese submarines to contend with, but Germany had sent U-boats to the Indian Ocean to give some slight support to her eastern ally. This had long been suspected, and it was proved beyond doubt when the time came for the U-boats to obey Admiral Doenitz's call to surrender.

The enemy submarines in the Indian Ocean at this stage in the war achieved scant success, but this was due more to the efficacy of our patrols and our methods of routeing merchant ships than to any lack of enterprise on the part of the commanding officers of the enemy submarines.

In April 1945 there came a reminder to the general public that the U-boat menace was still very real in the wide spaces of the Indian Ocean. This was in the form of an account issued by the Admiralty of the destruction of a U-boat after a hunt lasting seven days and covering a thousand miles from the position in which the enemy submarine had declared its presence by torpedoing a merchant ship. The successful hunting down of that submarine is an example of what can be achieved by close co-operation of different arms of the Services. In it were concerned ships of the Royal Navy and Royal Indian Navy, carrier-borne naval aircraft, and shore-based aircraft of the Royal Air Force.

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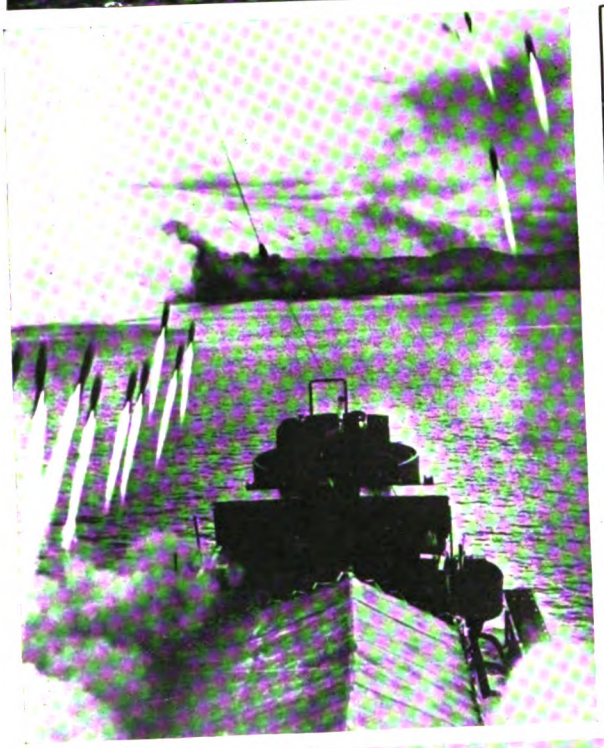

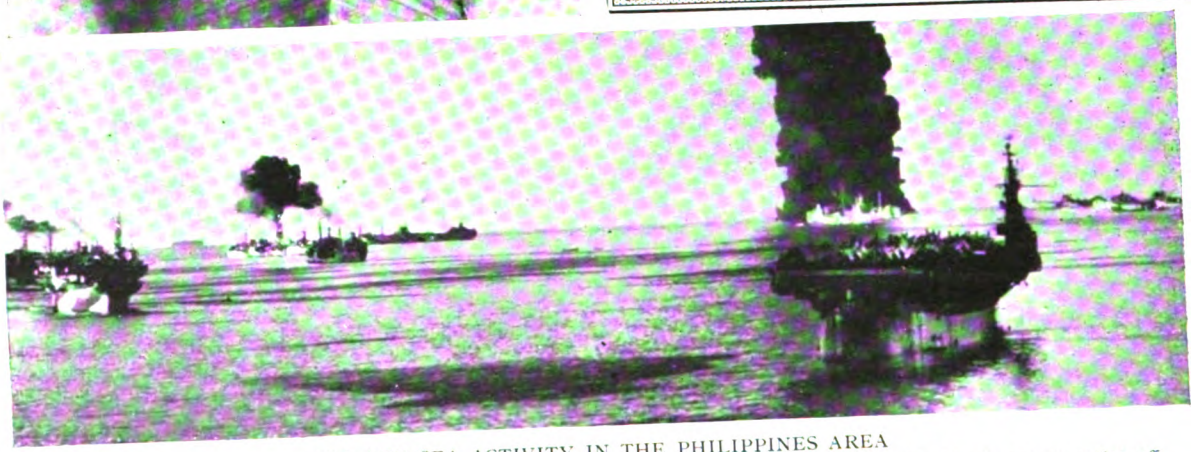

AIR AND SEA ACTIVITY IN THE PHILIPPINES AREA

Top, brought down in flames a Japanese bomber crashes into the sea just ahead of a U.S. battleship during an action off Luzon Island; middle left, a rocket-firing LCI sets up a barrage of projectiles during the first landings on Mindoro Island; right, map of Luzon Island on which landings were made by the Americans; bottom, a thick column of black smoke rising from an American oil tanker set afire by the enemy somewhere in the Central Pacific; units of the U.S. Navy surround the blazing oiler.

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RETURNING FROM AN ATTACK ON SABANG

The wash of an accompanying destroyer glistens in the setting sun as ships of the British Eastern Fleet return from an attack on the Japanese base at Sabang. Second from the left is H.M. aircraft-carrier *Illustrious* and on the right is H.M. aircraft-carrier *Victorious*.

First indication of the presence of an enemy submarine in those waters was when a merchant ship was torpedoed without warning near Madagascar. Surface warships were at once despatched to rescue survivors from the merchant ship and to hunt the submarine.

At the same time a force under the command of Captain J. E. Broome, D.S.C., R.N., in the escort aircraft-carrier H.M.S. *Begum*, and consisting of the escort aircraft-carrier H.M.S. *Shah*, the frigates H.M.S. *Findhorn*, *Taff*, *Nadder* and *Parrett*, and the sloops *Godivari* and *Cauvery* of the Royal Indian Navy, was ordered to take up the search for the submarine. This force was then several hundred miles away from the position in which the merchant ship had been torpedoed.

Continuous anti-submarine patrols flown by naval carrier-borne aircraft failed to locate the enemy, but two days later a second merchant ship was torpedoed, presumably by the same submarine. Shore-based Catalina aircraft of the Royal Air Force were then despatched to join in the hunt.

On the morning of the fifth day after the torpedoing of the first merchant ship a naval reconnaissance aircraft from H.M.S. *Shah* sighted a submarine on the surface some distance away from the surface forces. The submarine at once dived. The ships at once converged at high speed on the position in which the submarine had been seen to dive, and a prolonged search ensued, but without success.

Several hours later a Catalina aircraft of the Royal Air Force detected a submarine and reported its position to the ships, which at once set course to intercept.

At the first light of dawn on the seventh day of the search a Swordfish aircraft sighted the submarine about 50 miles astern of the surface forces. The ships turned and dashed back to the sighting position. This time, after a search which lasted for close on twelve hours, the submarine was detected by the Asdic of the Royal Indian Navy sloop *Godivari*. A depth-charge attack was then carried out by H.M.S. *Findhorn*. This was followed by a series of heavy explosions deep in the sea, and then a large patch of oil rose and spread slowly on the surface. The area was patrolled for several hours by the ships but no further sign of the submarine could be detected, and it was officially considered to have been destroyed.

That long hunt may have taken place far from the operations being carried out off the Burma coast, but it was fairly close to the main lines of supply for these operations. Moreover, it was obvious that the danger must be greater from the Japanese submarines when closer to the bases from which they were known to operate.

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CHAPTER XIII

THE divergence and scope of the naval operations in the Indian Ocean certainly gave the enemy furiously to think. It was obvious that fleets of warships could not operate for considerable periods off the Arakan coast of southern Burma, or between the Andaman and the Nicobar Islands, unless they were highly organised with a well-prepared naval base upon which to fall back for fuelling, storing and ammunitioning. Yet the Japanese knew from their sources of secret intelligence that Task Forces of the size and importance which they had encountered on the eastern side of the Bay of Bengal had not been using Calcutta, Madras, Colombo or Trincomali. Yet these were the only long-established harbours capable of dealing with the needs of fleets of such size.

Thus the Japanese were posed with a puzzle of the first order. Not knowing where the secret base was, they could not attempt to strike at it. Moreover, knowing nothing of the capacity of such a secret base, they had no data upon which they could calculate the probable strength of the next naval task force which might be found operating against their increasingly vulnerable Indian Ocean flank.

The secret of the base behind all these British naval operations was one of the best kept of the war, and naturally no inkling of the truth could be allowed to leak out until the war against Japan had been carried so far to the eastward as to preclude sudden Japanese attack upon this secret base. Thus it was not until the middle of July 1945 that the world was allowed to know that the British East Indies Fleet had had at its disposal a secret base known as "Port T."

Although enormous concrete caissons had not been constructed and towed to "Port T," this port was, in a sense, the "Mulberry" harbour of the east, and it was largely artificial although not prefabricated. The story of the establishment of "Port T" is eloquent of the wisdom of our long-term planning and the gigantic effort which we disposed in the eastern war while engaged in north-west Europe in the greatest and most complicated combined operations in history.

ON THE FLIGHT-DECK OF H.M.S. *ILLUSTRIOUS*

Barracudas and Corsairs on the forward end of the flight-deck of H.M. aircraft-carrier *Illustrious* being stowed away after taking part in a raid. One of the Barracudas is on the lift going down to the hangar.

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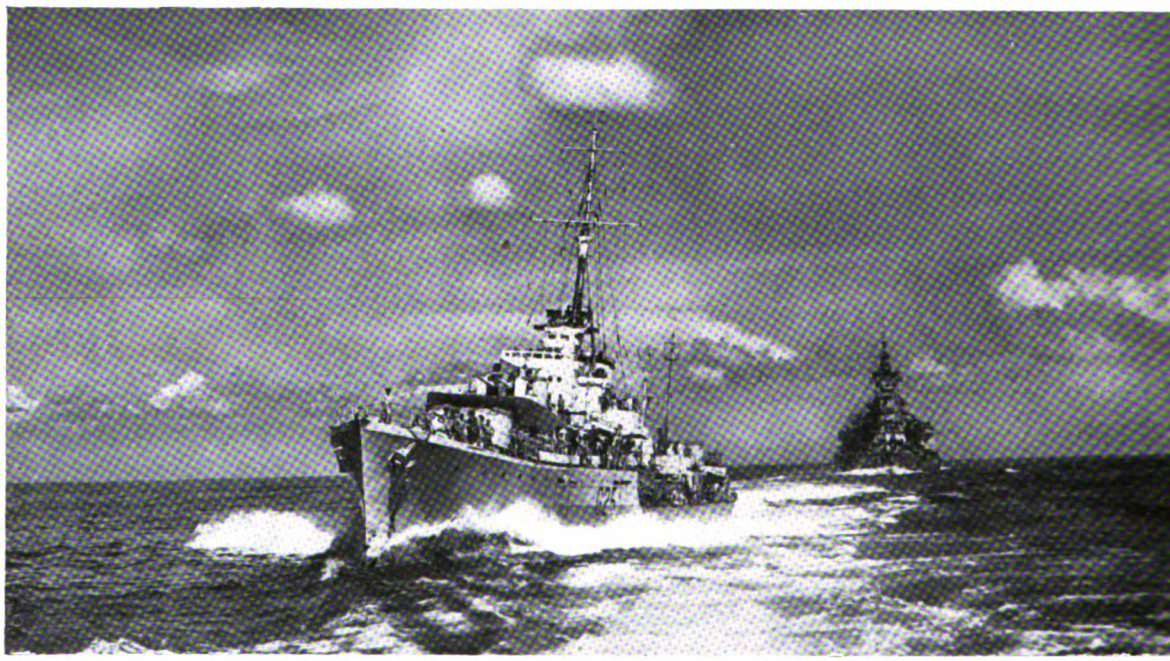
Approximately 500 miles south of Colombo and about 3,000 miles from the coast of Australia there is a collection of waterless coral islets which you will find on some maps under the name of the Chagos Archipelago. Between these islets and the southern end of the long string of the Maldive Islands there is a place called Addu Atoll. This atoll consisted, before the Royal Navy took possession, of four islets arranged in the shape of a rough triangle and surrounded by a coral reef which enclosed a deep lagoon. The names of the four islets are Gan, Hitadu, Midu, and Wilingili, and they, with the coral reef and the anchorage, were destined to become under the stress of war a major naval base. Addu Atoll, under the code name of "Port T," had probably never before seen a large liner or a warship worthy of the name. Yet in its new guise it attended upon the wants of great fleets and gave shelter to such vessels as the proud trans-Atlantic liner *Queen Mary* in her wartime role of troopship.

The story of the development of "Port T" is one of the most important of the "back room boys" stories of the war. Although its development began long before the scope of the present volume it could not be told until the war against Japan was drawing towards its close, and without realisation of



WITH THE BRITISH EASTERN FLEET

A destroyer steaming up to receive a package from the *Queen Elizabeth*. Astern of her is the battleship H.M.S. *Valiant*. Both battleships took part in the Allied naval operations against Sabang, Northern Sumatra.

the great efforts which went to the formation of "Port T" one is prone to fall into the error of thinking that the naval operations on the enormous sea frontage from Burma to Java were comparatively easy of achievement at short notice.

It has long been fashionable to think that the British Empire is always stupid and slow to get off the mark in war, a trait which is counteracted by a miraculous facility for "muddling through." The story of "Port T" gives the lie to this belief. Before the outbreak of war in Europe there had been set up by the Admiralty what was then known as a "Mobile Naval Base Organisation." In this organisation there were large numbers of Royal Marines, upon whom was to devolve the task of defending the "Mobile Naval Base."

Addu Atoll had long been selected as the site for a temporary naval base in the event of war, and the first steps towards the preparation of this secret base were taken some three months before the Japanese attacked the American Navy at Pearl Harbour and thereby forced an extension of the war from Europe to the whole circumference of the world.

It was in September 1941 that the First Royal Marine Coast Regiment and the Landing and Maintenance Company of the Mobile Naval Base Defence Organisation reached Addu Atoll. They were under

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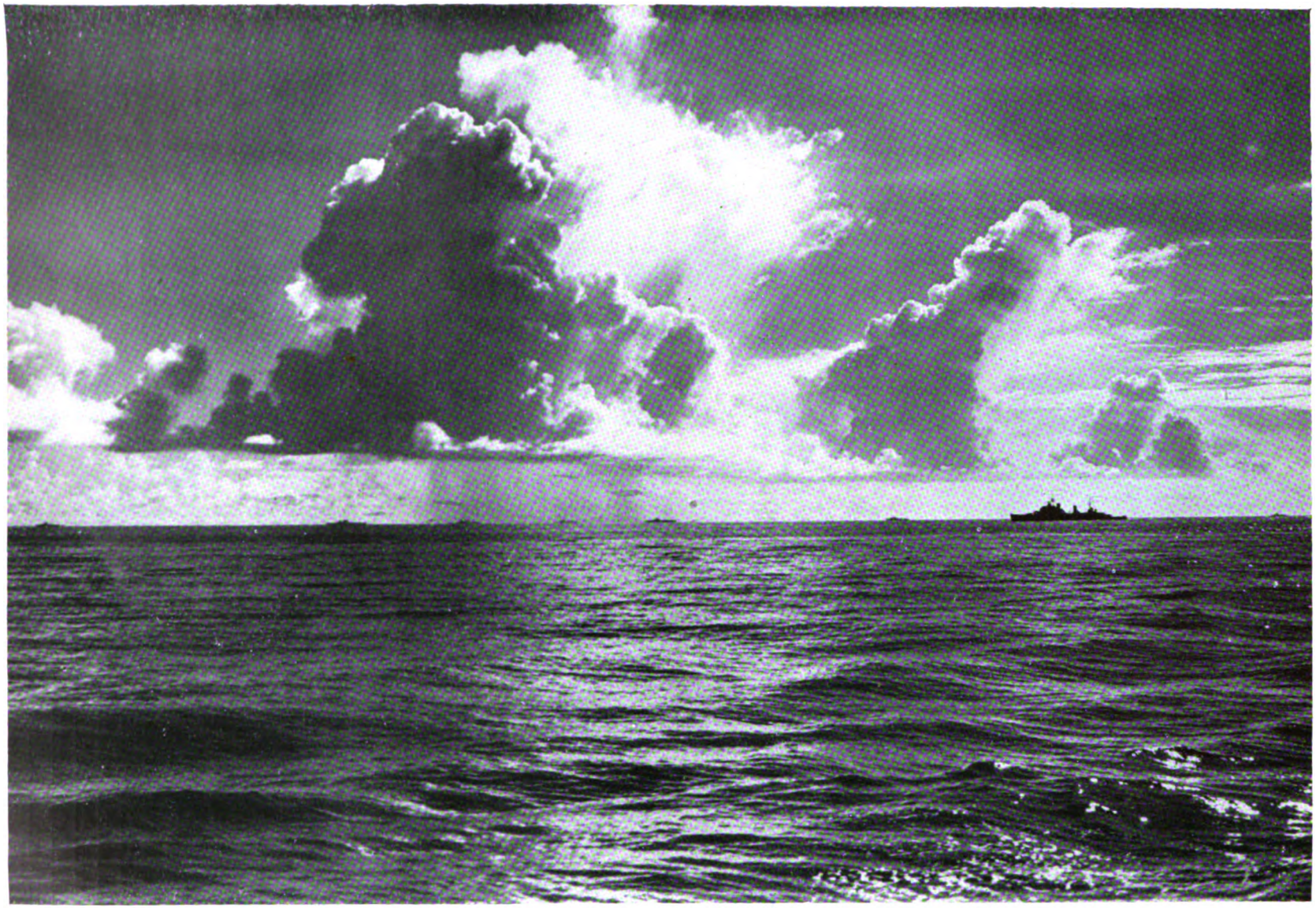

SEASCAPE FROM THE FAR EAST

Ships of the British Eastern Fleet photographed from the deck of H.M.S. *Queen Elizabeth* during Allied naval operations against Sabang, in Northern Sumatra. The photographer chose a moment that presented an opportunity to produce a perfect seascape picture.

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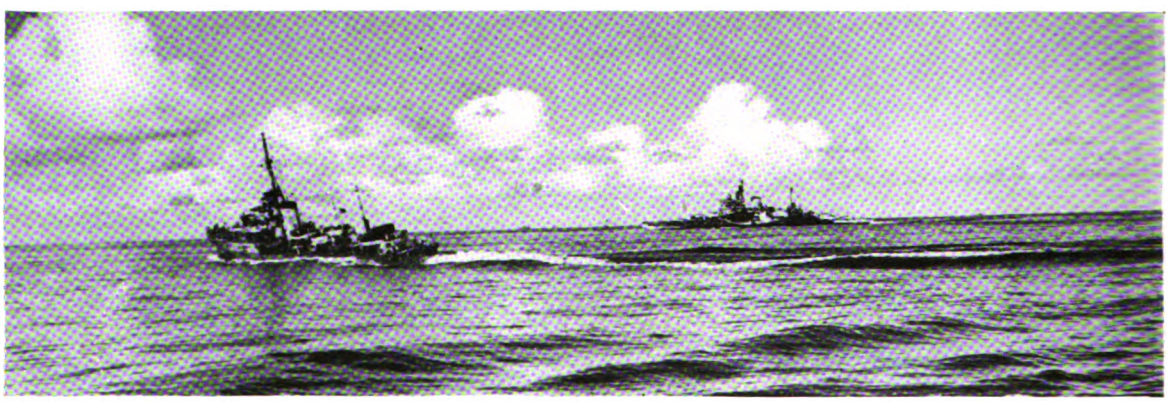
the command of Lieutenant-Colonel W. B. F. Lukis, and as soon as they had landed they realised that they were up against one of the toughest tasks which even the Royal Marines have ever been asked to tackle. The islets were shrouded in virgin jungle through which there were not even tracks. The islands were only a few feet above sea level. Against them and over the coral reef broke the perpetual heavy surf of the southern Indian Ocean. Tall palms towered over the low sandy islets. It all looked very nice—from a safe distance—but the disadvantages of this apparent island paradise very soon made themselves felt in no uncertain manner. The climate was hot and very damp—for the atoll is surrounded by thousands of miles of sea and as near to the equator as makes no matter. There was practically no water on the islets, so that all supplies had to be landed over the beaches, so that there was barely enough for drinking purposes and very seldom enough to allow for washing. Flies and mosquitoes were everywhere, and what was more surprising and even worse, the islets abounded in vicious rats.

The Royal Marines soon found that every small scratch—and they were inevitable during the task of carving clearings in the jungle—immediately turned septic and developed into an ulcer that refused to yield to treatment. The very humid climate favoured the growth of micro-organisms which literally ate the skin from the flesh. The only available diet, of tinned food or dried food with no green vegetables or fresh fruit, reduced the natural resistance of the men to such infections. Very soon there were a large number of men suffering from painful ulcers, and few of these were able to shake off their maladies until they had been evacuated to Colombo and taken up into the hills of Ceylon.



UNITS OF THE BRITISH EASTERN FLEET

A destroyer steams off to deliver a package to another ship during allied naval operations against Sabang, in Northern Sumatra. The photograph was taken on board H.M.S. *Queen Elizabeth*, one of the many British warships of the Eastern Fleet.

Worse soon followed. A form of scrub typhus, born of the rats and their parasites, broke out. While working, a man would suddenly fall unconscious without having previously complained of sickness. A violent fever followed for about fourteen days, which left the victims weak and debilitated. To add to the troubles, malaria also appeared in malignant form, but it never became a serious menace owing to the stringent anti-malaria precautions which were taken.

None the less, the rate of sickness was such that 23 per cent of the whole force had to be evacuated in the first three months in the hospital ship *Vita* as too ill to be of further service in that part of the world.

Despite everything, however, the work of carving a naval base out of raw nature was relentlessly hurried forward. The first task was the provision of landing places to facilitate the supply of the men ashore. Most of these landing places had to be made by blasting away the coral below water level. Then sites in the jungle had to be cleared and camps erected.

All that was preliminary work. There followed the construction of roads which would be capable of taking the heavy guns and other bulky equipment required for the defences of the base—for "Port T" was to be a fully defended naval base. The roads were the first consideration, for until the heavy equipment could be taken to the sites for the big coast defence batteries work could not be begun on installing the gun-mountings, range finders, searchlights, signal towers, and the rest.

Such natives as there were proved friendly, but they were almost useless, probably due to the fact

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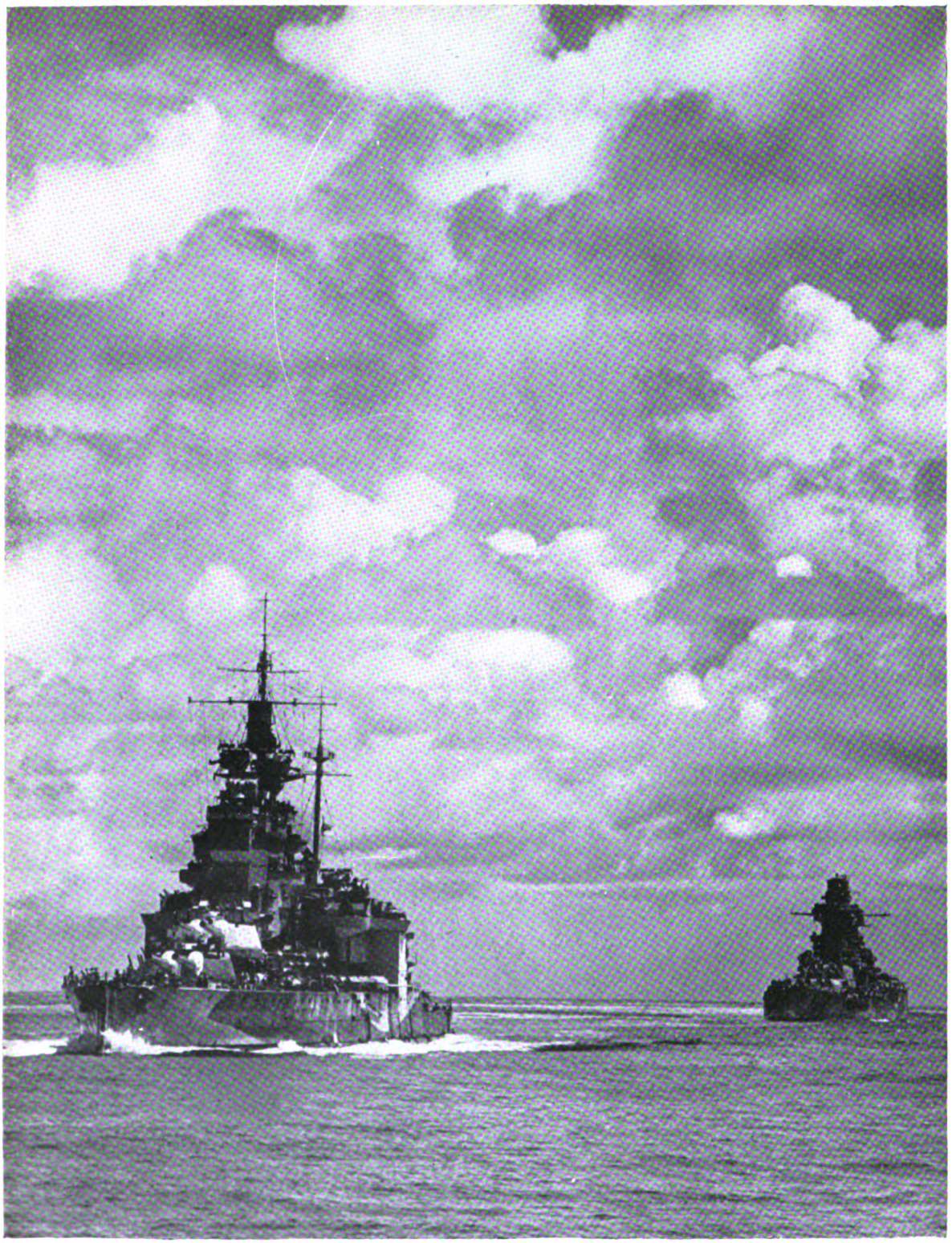

MIGHTY SHIPS IN LINE

H.M.S. *Valiant*, battleship of the British Fleet, cruising ahead of the French ship *Richelieu* during operations against Sabang, in Northern Sumatra. The photograph was taken from H.M.S. *Queen Elizabeth*.

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that they lived chiefly on fish caught in the lagoon. They were willing to help, but proved quite incapable of any sustained work and could do little beyond assisting in stripping the camp sites of vegetation. They were very timid and apparently blessed with an inexhaustible sense of humour. The sight of lorries being put ashore for the transport of the guns to the batteries, for instance, sent them into fits of laughter.

Among the greatest and most difficult tasks which had to be undertaken by the Royal Marines was the building of roads. On the islet of Hitadu, for instance, a four-mile long roadway capable of carrying heavy traffic had to be built from the landing place to the site which had been chosen for the heavy-gun battery. That road had to be built across a swamp which was infested with giant land crabs. Undaunted by these creatures or the fact that the depth of the swamp was unknown, a major of the Royal Marines led his men into the swamp. They were all stripped, and they sank thigh and waist-deep into foul-smelling black ooze, but they laid in the heart of the swamp foundations for the road. The first foundations consisted of palm-fronds lashed in bundles of ten. Upon this foundation the road—which had a running surface capable of carrying loads up to 13 tons—was built of prefabricated track and crushed coral, held together with the trunks of palm trees staked down.

On the island of Midu one road was entirely built by a corporal and six Marines, who worked continuously on the road for two months. This road was built on a foundation of "cord" made of the trunks of palm trees and finished with a top dressing of earth and sand and crushed coral.

Lesser men would often have been disheartened, not only by the heat and humidity of the climate and the decimation of sickness, but also by the frequent torrential storms which undid days of work in as many minutes. These storms washed away newly made road surfaces, flooded gun-sites, and reduced the clearings and camps to swamps. The unloading of ships, too, was a difficult business until the harbour had been constructed. For a long time unloading could only be carried out within a certain period on each side of high water. In order to get through the work, therefore, unloading had to be

PREPARING MISSILES ON A U.S. NAVY ROCKET CRAFT

Gunners aboard an American rocket craft preparing their missiles. The addition of rocket-firing devices provides even small vessels with the fire power of much heavier warships. Rocket craft were employed during the D-Day landings.

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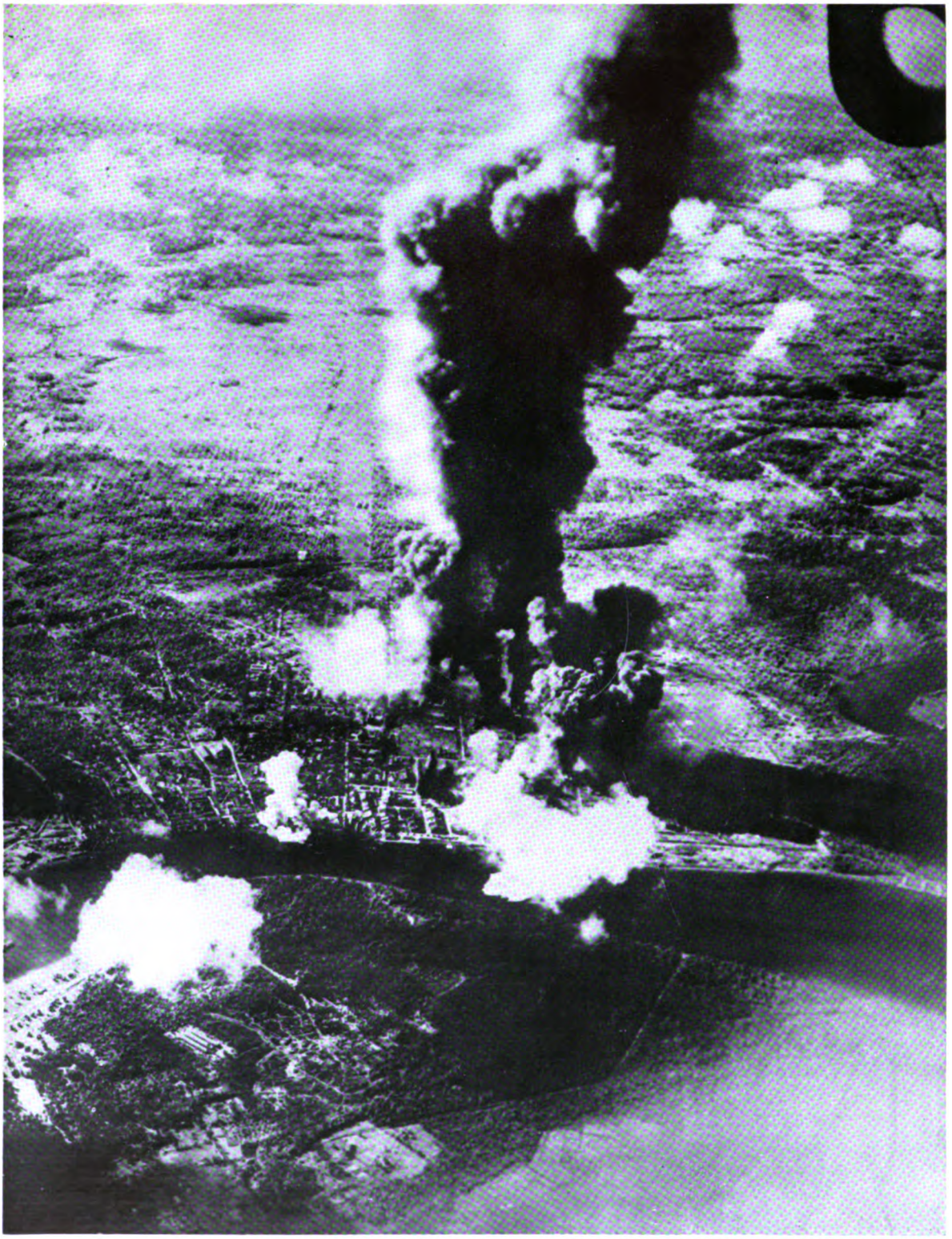

SMOKE RISING FROM THE TARGET HIT BY CARRIER-BORNE AIRCRAFT

British carrier-borne aircraft of the Fleet Air Arm delivered an accurate attack on the enemy oil refinery at Pagkalan Brandan, in Sumatra. The whole weight of bombs from the Avengers and Fireflies fell within the target area, and the power-house and other vital plants received direct hits.

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continued day and night whenever the tide served, with the men working two six-hour shifts in every twenty-four and able to stop for rest and food only during the hours close to low water. Nor were matters eased by the frequent, and for some time unaccountable, severing of telephone and other electric cables. After a time it was discovered that this was due to an exasperating mania on the part of a native girl. She had no idea what a telephone cable was, but was quite mad and most persistently cut them as soon as they were laid.

In spite of all difficulties the work of converting these atolls into "Port T" went forward so well that by December 8th, 1941, when the news of Japan's entry into the war reached the islands, the anchorage was already in a state of defence. The programme had required the guns of the batteries to be mounted in six weeks, and in six weeks to the day the big batteries fired their proof rounds—but not before the "Devon" and "Kent" batteries of the Royal Marine Coast Regiment working on Hitadu and Mitu had been reduced by sickness to less than fifty men apiece. But the great secret base was

THE RETURN OF A FIREFLY

British carrier-borne aircraft of the Fleet Air Arm delivered a powerful and accurate blow against an enemy oil refinery at Pagkalan Brandan in Sumatra. This photograph shows deck crews folding the wings of a rocket-firing Firefly on its return from the attack to H.M.S. *Indefatigable*.

fit for use, and on January 3rd, 1942—four months from the day the Royal Marines had landed on Addu Atoll—the first convoy of five troopships escorted by the cruiser H.M.S. *Emerald*, put in to water and refuel.

Since then much has been done at this secret naval base far from the normal shipping routes. A tubular bridge has been built between the islets of Mitu and Hitadu. On the island of Wilingili a channel has been cut between the sea and the mosquito-breeding lake so that the brackish water of the lake became tidal and the larvae were killed. Stone causeways have been built between the islands.

"Port T" has served a tremendous purpose during its secret existence. Not only did it play a most important part in the safe conduct of large numbers of troops and hundreds of valuable war cargoes to and from Australia, but it greatly facilitated the secrecy and sustained nature of our naval operations against the Japanese in Burma, Malaya, and the western parts of the Dutch East Indies. These were the operations which "softened up" the Japanese in Burma and, by denying them supplies, reinforcements or the means of escape, laid the foundations of the victorious Burma campaign. Moreover, they had

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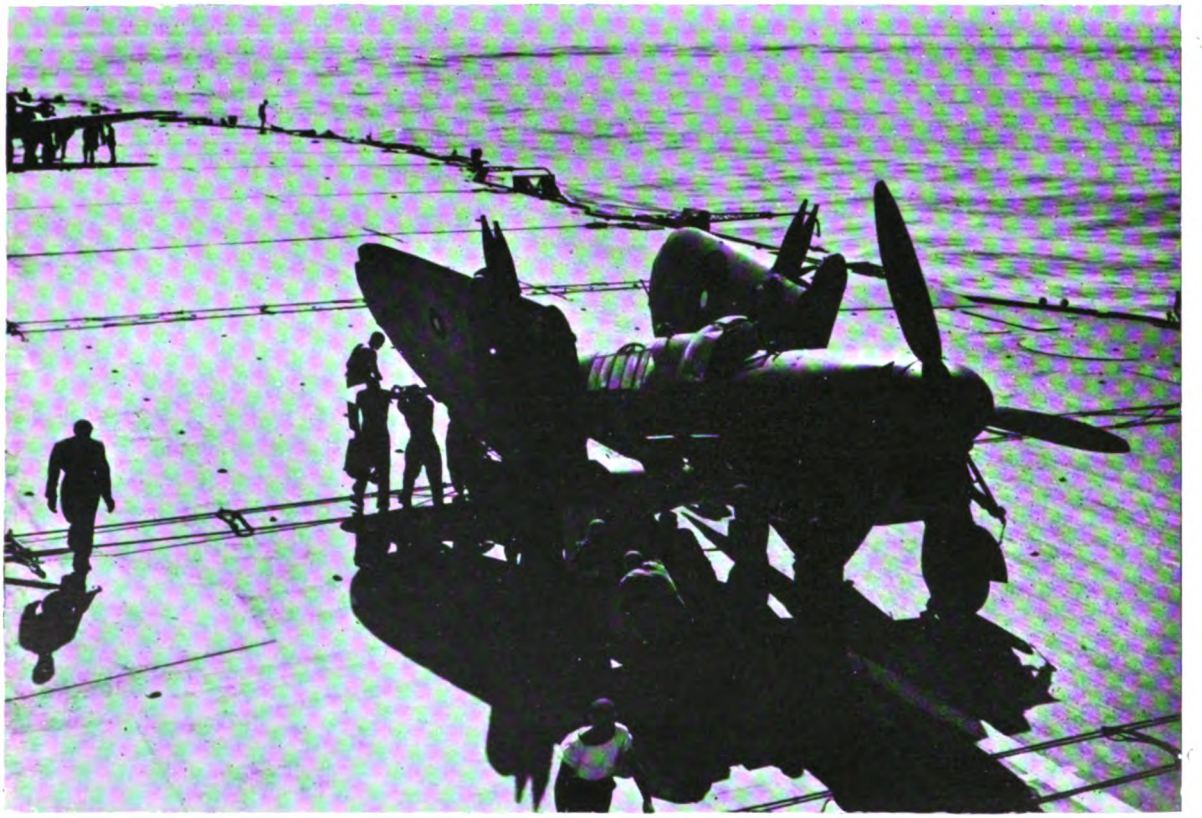

AIRCRAFT OF H.M.S. *INDEFATIGABLE* BACK FROM THE STRIKE

The aircraft-carrier, H.M.S. *Indefatigable*, which took part in the attack on the oil refinery at Pagkalan Brandan. The above photographs were taken from her flight-deck and show a Seafire which crashed and a deck crew folding the wings of a Firefly back from the strike.

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more far-reaching effects in the Pacific and around Japan itself because they robbed Japan of three-quarters of its oil-refining capacity.

As the war in the Pacific Ocean was carried ever closer to the Japanese main islands, and as it became increasingly clear that Japan, in a struggle for survival, was being forced to jettison her conquests in the south and south-west, attention was naturally more and more focused upon the British and American fleets operating closer to Japan. The British East Indies Fleet, however, continued to deal the enemy hard blows from the Bay of Bengal so that there could be no possibility of pockets of enemy resistance becoming strongly organised and in order to ensure that any such pockets should have no effective communications with the rest of the Japanese armed forces. When considering "pockets" of resistance or potential resistance in this theatre of war it is as well to remember that there were several million Japanese in this area and that they were capable of "living on the country" to a far greater extent than any European troops.

COMMANDER-IN-CHIEF OF THE BRITISH PACIFIC FLEET

Admiral Sir Bruce Fraser, G.C.B., K.B.E., with Captain H. Hickling, D.S.O., R.N., during the invasion of Normandy. In November, 1944, Admiral Fraser became Commander-in-Chief of the British Pacific Fleet.

So far from becoming unimportant, the work of the British East Indies Fleet was actually stepped up, as was shown by a communiqué issued from the Headquarters of the South-East Asia Command on August 15th, 1945. This stated:

"A powerful naval force under the command of Rear-Admiral G. N. Oliver, C.B., D.S.O. and two bars, which included the largest number of escort-carriers and naval aircraft to be engaged in a single operation of the British East Indies Fleet, sailed from Ceylon last week.

"At the announcement of the cessation of hostilities on August 15th the offensive operations for the day, which included attacks on Japanese-held airfields, shipping, and shore installations, were withheld."

Apart altogether from purely offensive operations, the British East Indies Fleet had a tremendous minesweeping task on its hands. The victorious conclusion of the Burma campaign and the increasing weakness of the Japanese forces in Malaya and the Dutch East Indies demanded that we should be, at the earliest possible moment, in a position to carry out naval operations—and probably combined operations—in the Singapore area. No operations of such type could be contemplated until the whole

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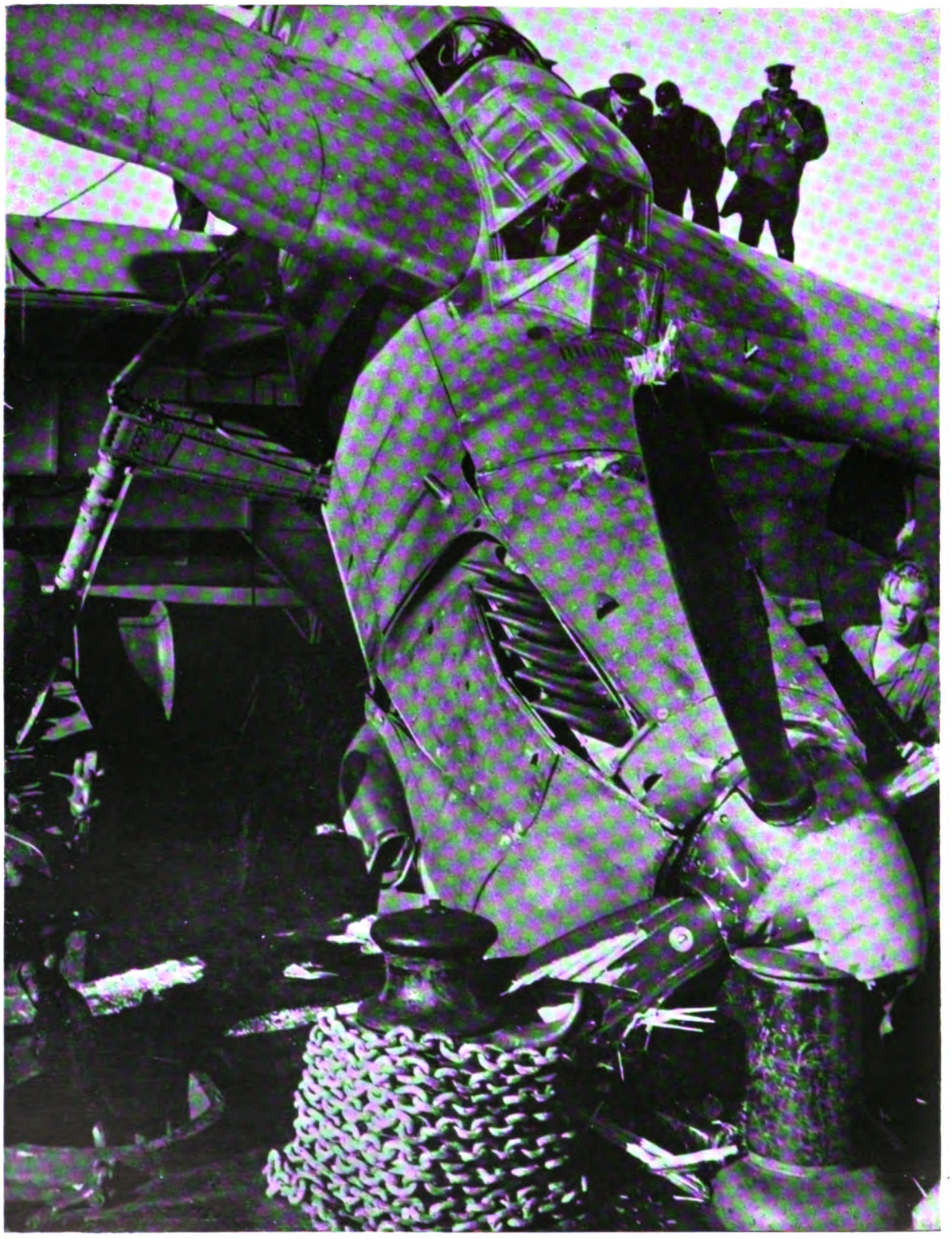

CRASH ON H.M. ESCORT-CARRIER *RAJAH*

Overshooting the mark when taxi-ing forward off the barriers after landing on the flight-deck of H.M. escort-carrier *Rajah*, a Barracuda crashes, but suffers only minor damage. The pilot was uninjured.

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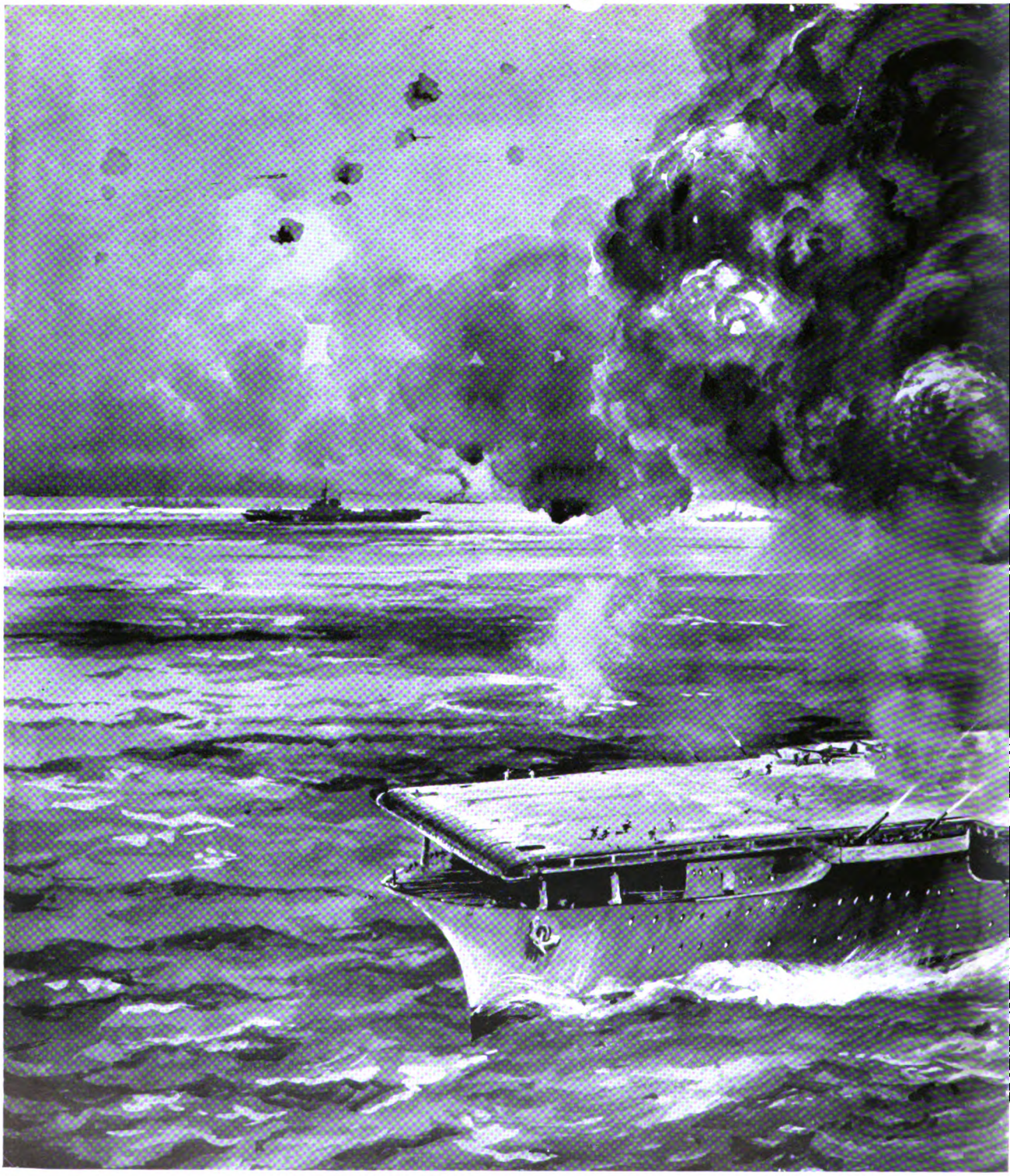

Specially drawn

AN EPIC OF THE SEA—THE

On the 27th June a burned and battered warship steamed into New York Harbour—gallant survivor of a dramatic story of the sea which began six weeks earlier. It was the U.S. aircraft-carrier *Bunker Hill*, a name now twice memorable in American history. Far away in the South Pacific on May 11th two Japanese planes each dropped a 500-lb. bomb on the *Bunker Hill* and then made suicide dives on to her decks, one of these plunging into 34 planes waiting to take off; a third plane dived to finish the job but was shot down into the sea by the guns of a destroyer. Flaming petrol was everywhere and several hundred of the crew were killed—victims of scalding, burning, and suffocation. For six hours members of the crew battled with the fires, while others, also at the

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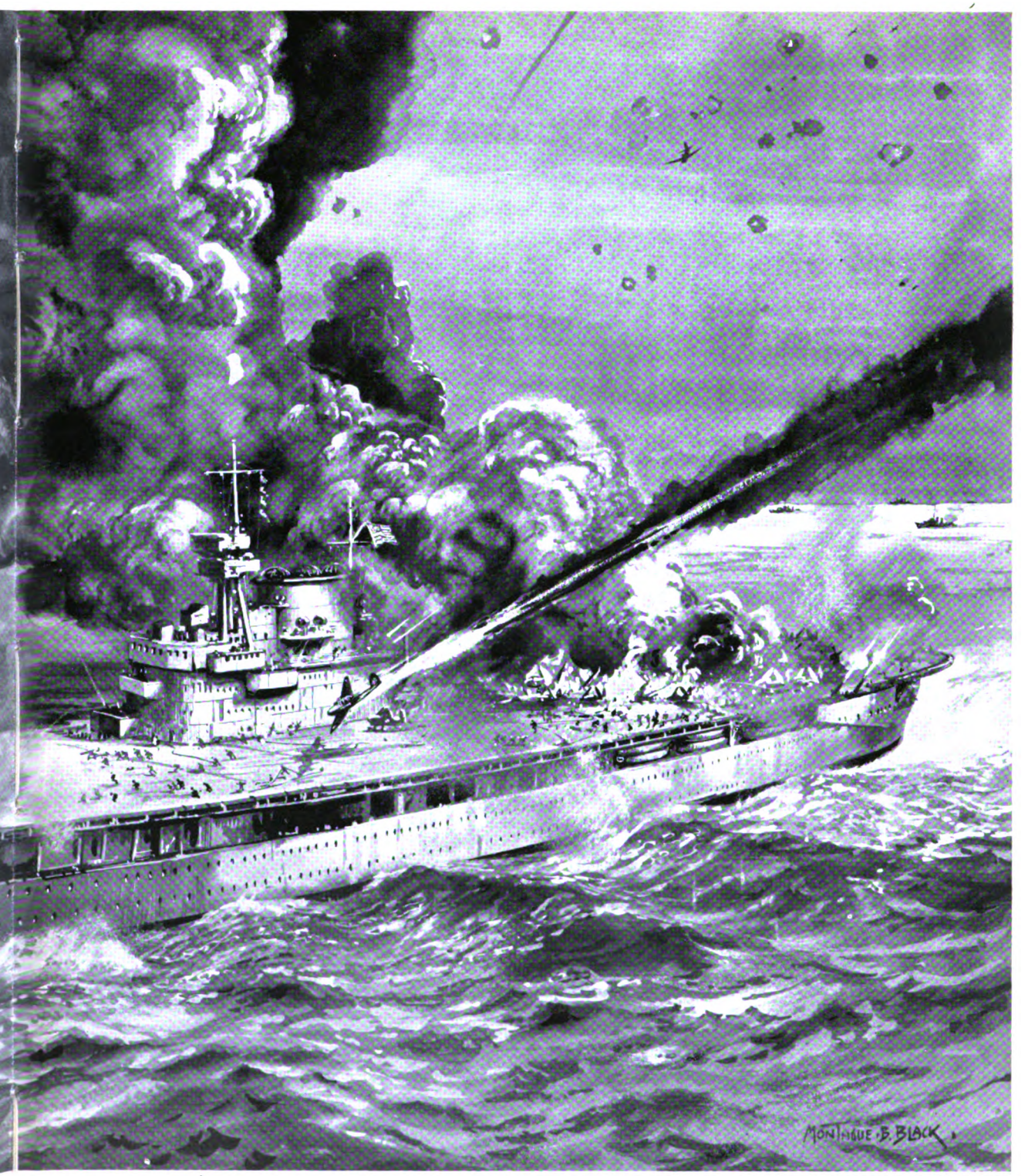

by MONTAGUE B. BLACK, F.R.S.A.

BUNKER HILL ABLAZE IN THE PACIFIC

risk of their lives, groped below to bring out the dead and wounded. Meanwhile the ship was heeling over and had drifted dangerously near a Japanese suicide-plane base. Then it was that the commander, Captain George Seitz, gave the order for a 70-degree turn. The burning part of the ship plunged into the sea, and, with a great roar, tons of water poured over the edge of the carrier, taking with it masses of flaming petrol and oil. The air was cleared, and the crew, with fresh heart, continued through the night to put out the smaller fires that still raged, and then to bring her back to port—limping and sorely stricken but soon to be ready to fight another day. Our special artist, Montague B. Black, F.R.S.A., here gives an impression of this dramatic story of the sea.

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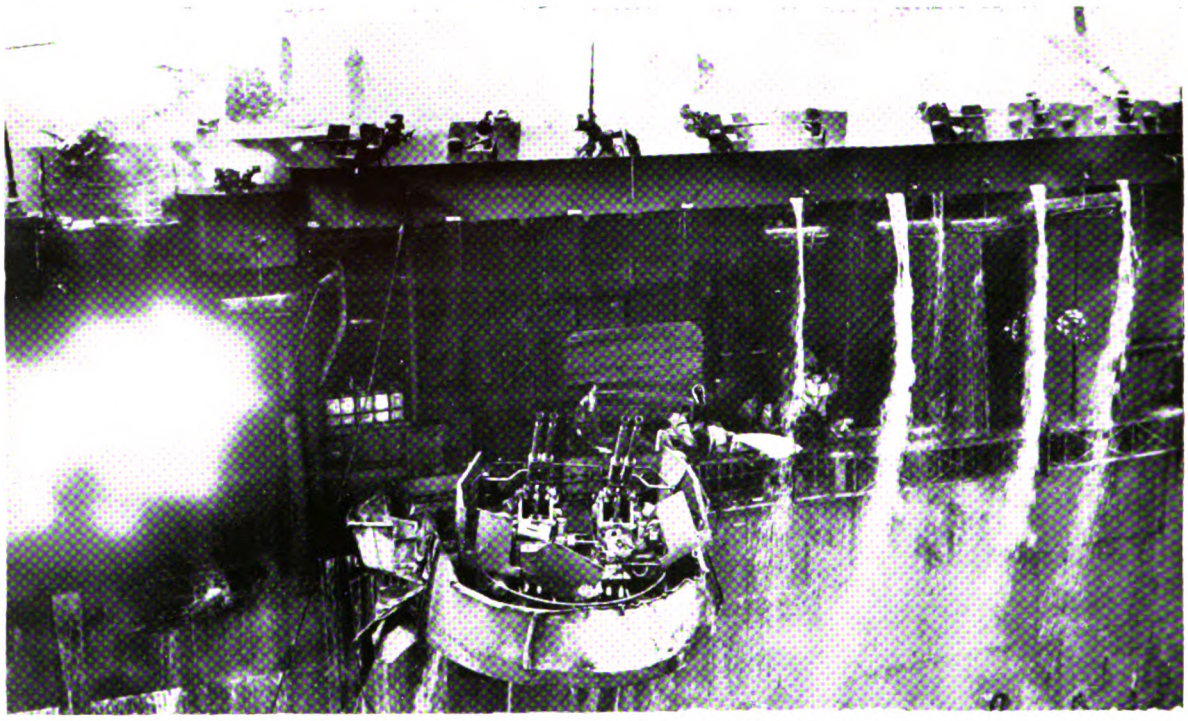

AN AIRCRAFT-CARRIER BECOMES A RAGING INFERNO

Streams of water cascading from the U.S.S. *Bunker Hill*, after two Japanese suicide planes had each dropped a 500-lb. bomb and then dived on to her decks. Fire-fighting parties fighting an heroic battle to get the flames under control.

of the approaches to Singapore had been cleared of mines. That meant extensive minesweeping in the Malacca Strait, which runs north-westward for some 450 miles from Singapore. The whole of that water lends itself to mining.

On the other hand there could be no doubt that minesweeping in the Malacca Strait at that stage of the war would be a most dangerous operation. The minesweepers, confined by their tasks to steering steady courses at slow speed, would be operating close off Japanese bases and airfields on both sides. The problem was somewhat analogous to that which would have confronted our naval command if it had been told to carry out extensive minesweeping operations in the Adriatic in 1941.

There was only one way in which such minesweeping operations could be carried out in the Malacca Strait without the virtual certainty of crippling losses. That was to carry out these minesweeping operations under cover of far more extensive movements of an offensive character calculated to keep the enemy fully employed.

It was in pursuance of this policy that, between July 5th and July 10th, 1945, extensive and sustained minesweeping operations were carried out in the approaches to the Malacca Strait under cover of heavy air and sea bombardments of airfields, radar stations and shore batteries in the Nicobar islands and of the Japanese air bases at Kutajara and Lhonga in north-west Sumatra. So successful were these "covering operations" carried out under the command of Rear-Admiral W. R. Patterson, C.B., C.V.O., whose flag was flying in the cruiser H.M.S. *Nigeria*, that the activities of the Sixth Minesweeping Flotilla and of Rear-Admiral Patterson's force were in no way molested by the enemy ; none of the British ships sustained any damage, and the only British casualty was the pilot of one of our naval aircraft.

These successful tactics were repeated a fortnight later, when minesweeping was carried out by the Seventh Minesweeping Flotilla off the west coast of the Malay Isthmus. Once again, the "covering" operations were completely successful, not only in themselves, but also in preventing enemy interference with the minesweeping ; but unfortunately one of the minesweepers—H.M.S. *Squirrel*—struck a mine and had to be sunk by our own ships owing to the impossibility of extricating her from a dangerous situation off the enemy-occupied coast. On this occasion the operations were carried out under the command of Vice-Admiral H. T. C. Walker, C.B.

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And so, while the combined fleets of Great Britain and the United States were bringing the war ever closer to the Japanese main islands several thousand miles away, the work of the British East Indies Fleet continued unremittingly, giving the Japanese in that theatre of war no respite, and gradually opening up the sea routes for the final reoccupation of Singapore and the whole of western Malaya and the western islands of the Dutch East Indies.

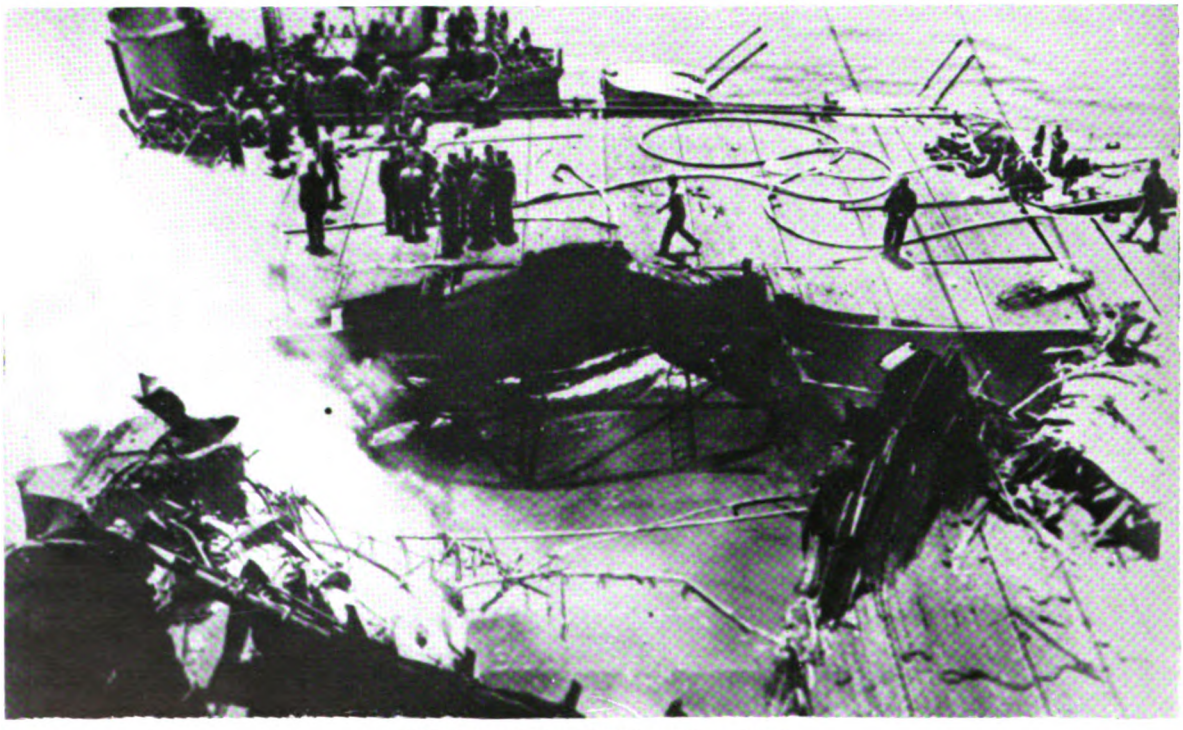
CHAPTER XIV

THE appointment of Admiral Sir Bruce Fraser as Commander-in-Chief of the British Pacific Fleet was announced by the Admiralty in December 1944. This was the first official intimation that such a fleet had been formed. Although it was not yet up to full strength the fact that a British fleet of increasing strength had already arrived in the south-west Pacific and was based on Australian ports had already begun to have a profound effect upon the strategy of the war in the Pacific Ocean.

General MacArthur, the Supreme Allied Commander in the South-West Pacific, had stated some time before that his strategy would not be one of the slow and tedious business of "island hopping," waiting until one island or group of islands had been cleared of the enemy before embarking upon operations against the next island group. Nevertheless, there had been a great deal of "island hopping," particularly in the New Guinea area, where Manus, in the Admiralty Islands, had become the main naval base of that theatre of war.

This type of warfare persisted until October 1944, and up to that time the main drives of Admiral Nimitz's forces from the Honolulu area had been in a due westerly direction. The most important of these at that stage of the war had succeeded in recapturing Guam from the Japanese during August.

By October 1944, however, it was clear that the presence of a British Pacific Fleet in Australian waters, even if it were at that time only "working up" to full efficiency and could not be considered as fully operational, constituted an important guard on the left flank of the whole of the Pacific operations against



WHEN A 500-LB. BOMB HITS A SHIP

A gaping hole made by a 500-lb. bomb released by one of the Japanese suicide planes before it crashed on to the flight deck of the U.S. aircraft-carrier *Bunker Hill*. The ship quickly became an inferno of blazing petrol and exploding ammunition, and only superb heroism and seamanship enabled her to survive and limp back into New York Harbour.

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the Japanese south-eastern conquests and the lines of sea communications leading to them. The presence of this "flank guard" allowed both General MacArthur and Admiral Nimitz to swing the main direction of their offensives to the northward. Whereas the axes of these offensives had up to that time been almost due westerly, from that time onwards they swung away to the northward. Admiral Nimitz's blows swung in the direction of the main Japanese islands, while those of General MacArthur swung northwards towards the Philippines and Hong Kong. And although the British Pacific Fleet took no active part in the initial stages of either of these campaigns, its mere presence as a guard on the southern flank enabled such a strategy to be developed.

The first big step in the working out of this new strategy of the Pacific war was the landing, on October 20th, of General MacArthur's forces on the island of Leyte, which lies in the central Philippines and about 1,500 miles to the north-west of the Admiralty Islands. Thus the distance which these forces had to steam from their base at Manus to the assault on Leyte was not very much greater than the distance from Tokyo to Leyte. It was a tremendous achievement, and it was to have tremendous and speedy results.

The re-establishment of American forces in the Philippine Islands obviously hit the Japanese where it hurt them most. Not only did it pose a direct and close threat to the whole of the Japanese sea communications between Japan and Malaya and the Dutch East Indies and Borneo—communications without which Japan could not for long carry on the war—but it was a big step towards the establishment of direct sea communications with China—an event which Japan had good cause to fear because of the full extension of her forces in China and the existence of Chinese airfields from which aircraft could operate against the coastal trade route and against the Japanese home islands.

A PRIZED TROPHY OF WAR

Eight men on board a destroyer with the British East Indies Fleet displaying a Japanese flag presented by the Royal Garwhal Rifles who had captured it on Ramree Island during operations with the ship in support.

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SCENES DURING THE SUCCESSFUL LANDING

Royal Marines of the British East Indies Fleet make a successful landing on Cheduba Island, south-west of Ramree. The photographs show: top, Royal Marines dashing ashore as their assault craft touch down on the beach; middle, a supporting destroyer firing a broadside as an assault craft heads for the beach; bottom, Burmese inhabitants helping to unload stores after the landing beach had been made secure.

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It was not surprising, therefore, that the Japanese reaction was both immediate and strong. In the first instance this consisted of air attacks, but these failed to achieve the results hoped for by the enemy, for most of them were driven off with heavy loss by the excellent air cover given to the American troops by aircraft operating from the aircraft-carriers in the offing. This air support was far from being concerned only in breaking up enemy attacks. Japanese installations on Leyte, Samar, Luzon and Mindanao were repeatedly and successfully attacked. Particular attention was paid to Japanese-held airfields. These led to the destruction on the ground of large numbers of Japanese aircraft, but an even more important result was that they virtually neutralised the enemy's attempts to fly reinforcement aircraft into the combat area from Formosa, Luzon and Borneo and thus to step up the weight of their air counter attacks.

Meanwhile the Japanese navy was on the move, and this was even more important. It led to three sea-air battles in the Philippines area between October 23rd and 26th. These battles inflicted crushing defeat and crippling losses and damage upon the major part of the remainder of the Japanese navy. By so doing they contributed greatly to the success which attended subsequent naval operations by the American and British fleets much closer to the Japanese main islands. It may well be, therefore, that History will judge that the three air-sea battles of the Philippines must be accounted among the great decisive battles of the world.

Naturally, the Americans were flying wide reconnaissance flights from their aircraft-carriers to guard against any surprise approach by units of the Japanese fleet. On Monday, October 23rd, searching aircraft operating from the aircraft-carriers of the American Third Fleet sighted a strong Japanese naval force south of Mindoro Island, which lies due south of Manila. This Japanese force was seen to consist of three or four battleships, ten cruisers, and about thirteen destroyers. It was shadowed and seen to be steering eastwards through the Sibuyan Sea—in other words, it was heading through the maze of islands for Leyte.

IN LIGHTER VEIN

A submarine's officers, posing in native costume during a quiet period on patrol in the Far East. This submarine's commander has been congratulated for particularly good work in destroying over 30 Japanese coastal supply craft.

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SUBMARINE'S TRIUMPHANT RETURN

The British submarine *Storm* arrives at a port in the United Kingdom after a daring and highly successful commission in Far Eastern waters. Among her most daring exploits was the raiding of the Japanese-held harbour of Port Owen. She sank one destroyer, four patrol or escort vessels, and 20 supply ships—nine of them in one day. H.M. Submarine *Storm* is seen here flying her Jolly Roger.

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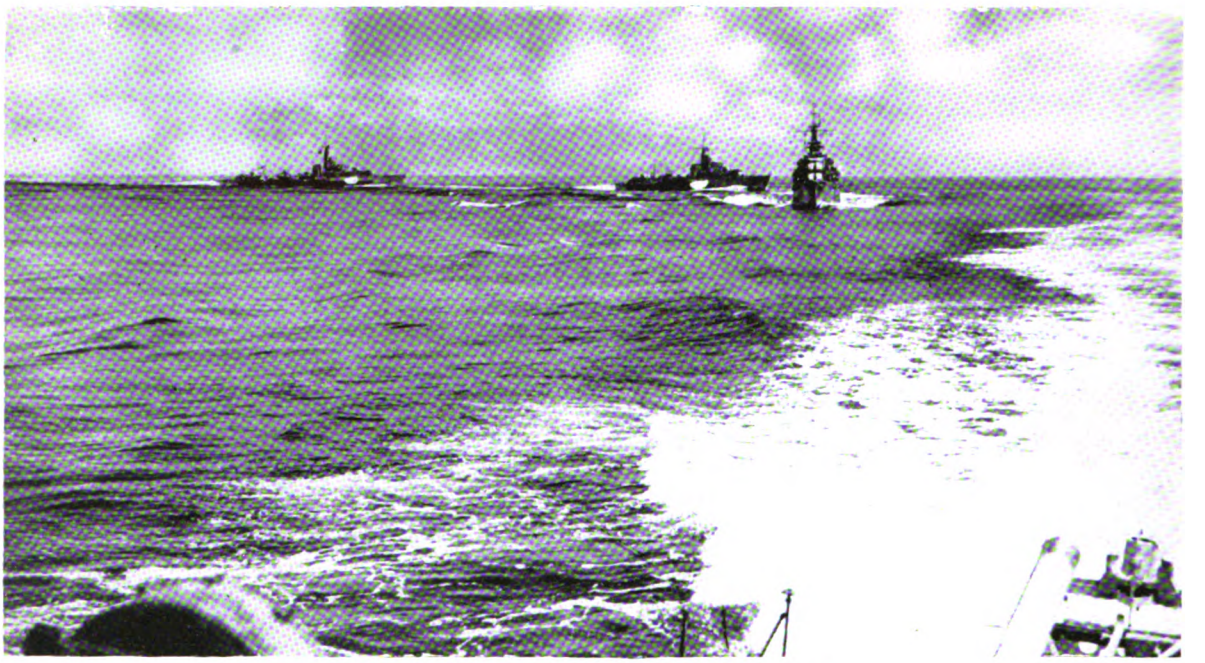

DESTROYERS OF THE EAST INDIES FLEET

The British destroyers *Venus*, *Virago* and *Vigilant* during the offensive sweep off Sumatra. All of these ships took part in the gallant action off Penang which resulted in the sinking of a Japanese heavy cruiser.

As soon as this force was reported, strong striking forces were flown off the American aircraft-carriers and went in to attack. This they did with conspicuous success, delivering a whole series of synchronised attacks by waves of aircraft. The first reports of the results of these attacks were very encouraging, but there was no time to analyse them, for other searching forces reported a second Japanese naval force at sea.

This second enemy force, which also included heavy ships, was sighted to the south-west of Negros Island, and was steaming east-north-east towards the entrance of the channel between Negros and Mindanao, which leads to Leyte from the south-west. First reports of this force gave its composition as two battleships, one cruiser, and four destroyers. Striking forces were at once flown off to attack this Japanese squadron, and first reports from the attacking aircraft indicated that all the major units had been hit and damaged.

Meanwhile events were developing far to the north-eastward. On that Monday afternoon a Task Group of the American Navy, operating to the east of Luzon, was attacked by a very strong force of Japanese shore-based aircraft. Although about 150 of the enemy aircraft were shot down during these attacks, the Japanese airmen succeeded in seriously damaging the American aircraft-carrier *Princeton*, one of the ships on which they concentrated their attacks. An attempt was made to save the *Princeton*, but her magazines exploded and she had to be sunk. Fortunately, however, the casualties among her crew were light.

At this juncture, and with the situation developing so rapidly, the loss of an aircraft-carrier was a serious matter. Fortunately, however, the Americans had with their Third and Seventh Fleets, which were operating in those waters, an ample number of these ships, so that the loss of one aircraft-carrier represented only a small reduction in the total of naval aircraft which could be deployed. This was in strong contrast to the situation occasioned by the loss of the aircraft-carrier H.M.S. *Eagle* at the beginning of the Malta convoy operations of August 1942.

Still more was to happen on that momentous Monday. In the late afternoon American reconnaissance aircraft sighted yet a third Japanese naval force at sea. This was yet another squadron of the Japanese main fleet. It was sighted to the south-east of Formosa and was steering south-south-east. In other words, it was clearly hurrying south from Japanese home waters and was making for Leyte. It was too late in the evening for this enemy force to be attacked by aircraft before dark.

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As darkness fell, therefore, the situation was as follows:—A strong Japanese naval force, which included four battleships and ten cruisers, had been attacked and had suffered serious damage among the islands about 200 miles to the west of Leyte.

Another Japanese naval force, including two battleships and at least one cruiser, had been successfully attacked among the islands about 200 miles south-west of Leyte.

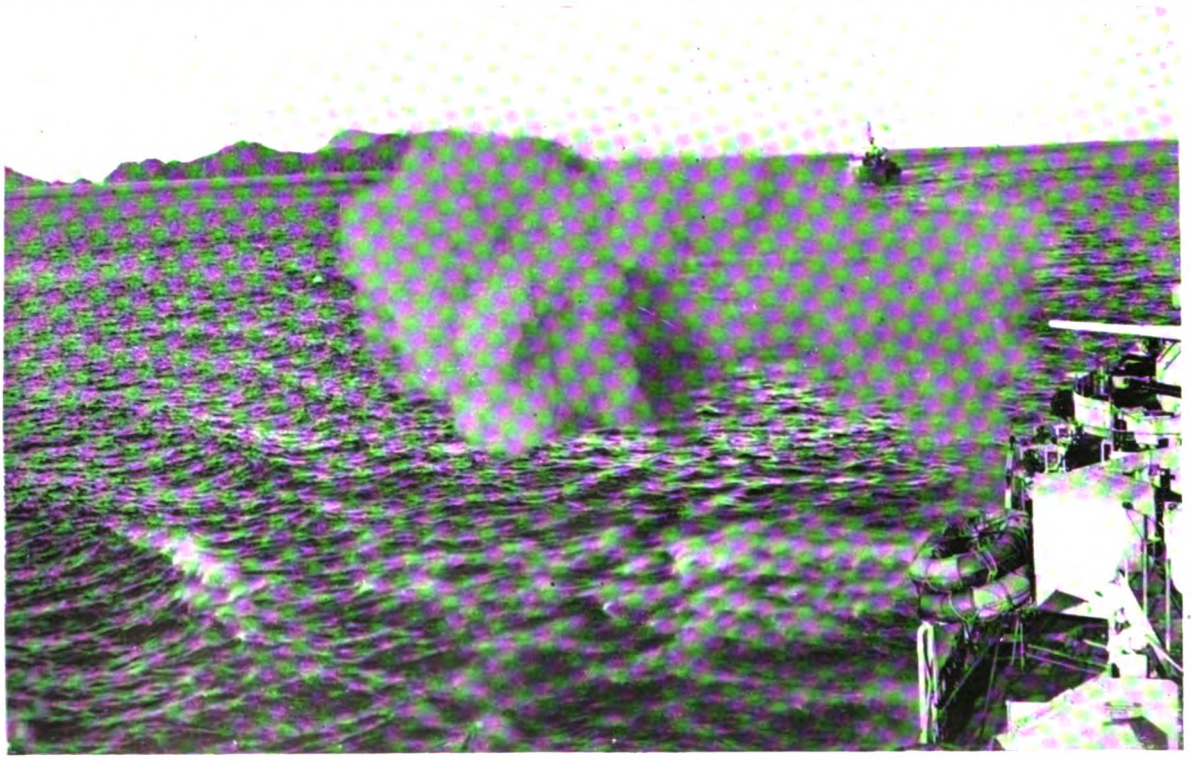
A third Japanese naval force, the composition of which was uncertain, but which certainly contained heavy ships and cruisers, had been located about 600 miles north of Leyte. This third enemy force was reported as including aircraft-carriers.

This triple battle of the Philippines inflicted such a decisive defeat upon the enemy and was so important that the strategy adopted by the enemy—and which proved his undoing—is worthy of examination.

It has long been an axiom taught in all the staff colleges of the world that to divide one's forces is to risk having each one of them defeated before they can support one another—which is just what happened to the Japanese.

Why did the Japanese split their forces in this seemingly unaccountable way? It is obvious that the force rushing down from the north could not have concentrated with either of the other two forces without causing serious delay to the whole of the Japanese operations. That force can therefore be ruled out of this apparent mystery. Mystery remains, however, with regard to the other two forces. Both were in among the Philippine Islands, and they were, when sighted by the American aircraft, rather less than 200 miles apart. At first sight it seems incredible that they were not concentrated. Their positions and the courses which they were steering seem to indicate that the first force sighted had come from the erstwhile French naval base of Kamranh Bay in Indo-China and the other from Singapore. To have concentrated these two forces would not have long delayed the Japanese commander, and it might even have kept his ships out of range of the American air reconnaissance until dusk.

The arguments in favour of effecting a concentration of these two western forces appear to be overwhelming, but there is one fact which stands out. Neither of these two Japanese forces approaching



THE BEGINNING OF A BOMBARDMENT

Another photograph taken from H.M.S. *Verulam* during the offensive sweep carried out by units of the East Indies Fleet off the coast of Sumatra. It shows the bombardment of the port of Kotaraja.

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from the west were accompanied by aircraft-carriers. The grave shortage of aircraft-carriers in the remaining Japanese navy had been taken into account in the Allied war plans, and it is noteworthy that of the three enemy forces engaged only the northern force, which was clearly the important Japanese home squadron, was provided with aircraft-carriers.

Lack of aircraft-carriers imposed quite different problems upon the commanders of the Japanese forces trying to strike at Leyte from the west, and there seems little doubt that, while avoiding the temptation of "putting all his eggs in one basket," he hoped to be able to use the islands and the Japanese shore-based aircraft to protect his squadrons from air attack. He does not seem to have been any too sanguine of this, but hoped, rather, that one of his forces would be able to slip through to Leyte while the American striking forces of carrier-borne aircraft were fully occupied with the other force.

In fact, the Japanese shore-based aircraft gave him virtually no help at all. That they could not do so is a measure of the effectiveness with which all the Japanese aircraft and airfields in the vicinity had been dealt with by the American naval aircraft before and during the initial stages of the American landings. In fact, the only operation by the Japanese shore-based air force which was keyed to the immediate strategic situation which was developing was the attack in which the U.S.S. *Princeton* was sunk. There is no doubt that this was planned to help the approach of the northern Japanese force—which again argues that it was the most important of the three.

With the first light of Tuesday, October 24th, action was joined with the Japanese force approaching from the north. In the early part of the day American air attack virtually deprived the Japanese commander of air support by sinking one of the few remaining large "fleet" aircraft-carriers and damaging two other aircraft-carriers. Admiral Nimitz must have been well pleased with the course which events were taking when he concluded his communiqué on that day with the words "General action is continuing."

For the next two days confused actions continued, and even at this distance of time it is difficult to collate them into a true picture. While a running battle continued to the northward, with the

ALL HANDS ON DECK

Swabbing the deck aboard H.M.S. *Howe*—a picture taken during the battleship's visit to Auckland, New Zealand. H.M.S. *Howe*, 45,000 tons displacement, carries ten 14-in. guns, sixteen 5.25-in. guns, as well as ack-ack guns and other armaments.

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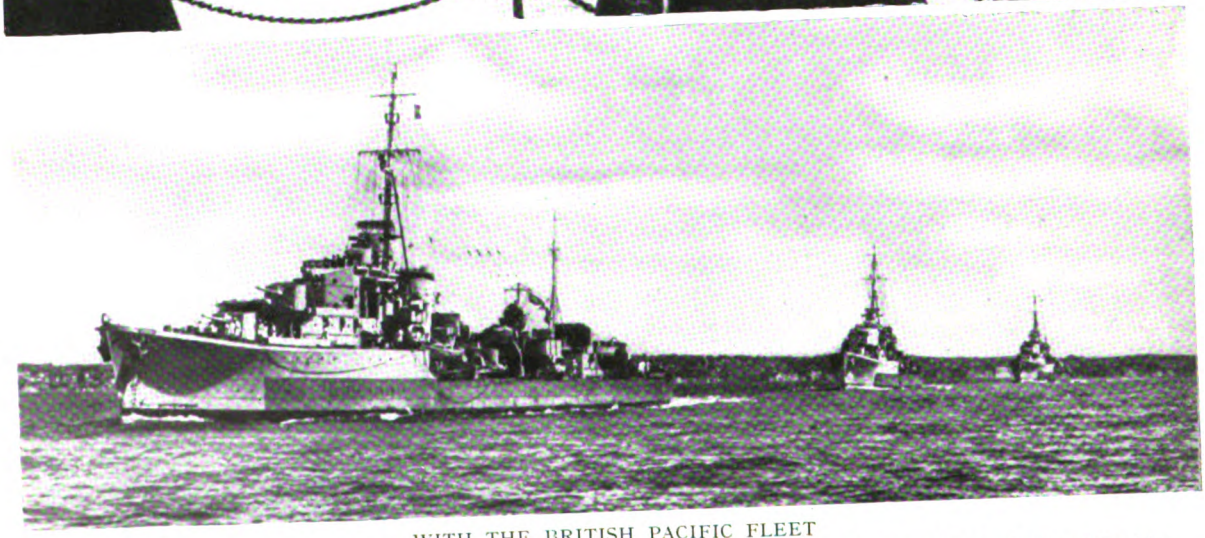

WITH THE BRITISH PACIFIC FLEET

The Royal Navy played a valiant part thousands of miles away in the Pacific, and these photographs are of some of the ships which helped to sound the knell of all Japanese hopes of world conquest. Top shows the battleship *King George V*; centre, the battleship *Howe*, at Auckland; bottom, the destroyers *Queensborough*, *Quality*, and *Quadrant* escorting the *Howe* during its visit to Auckland.

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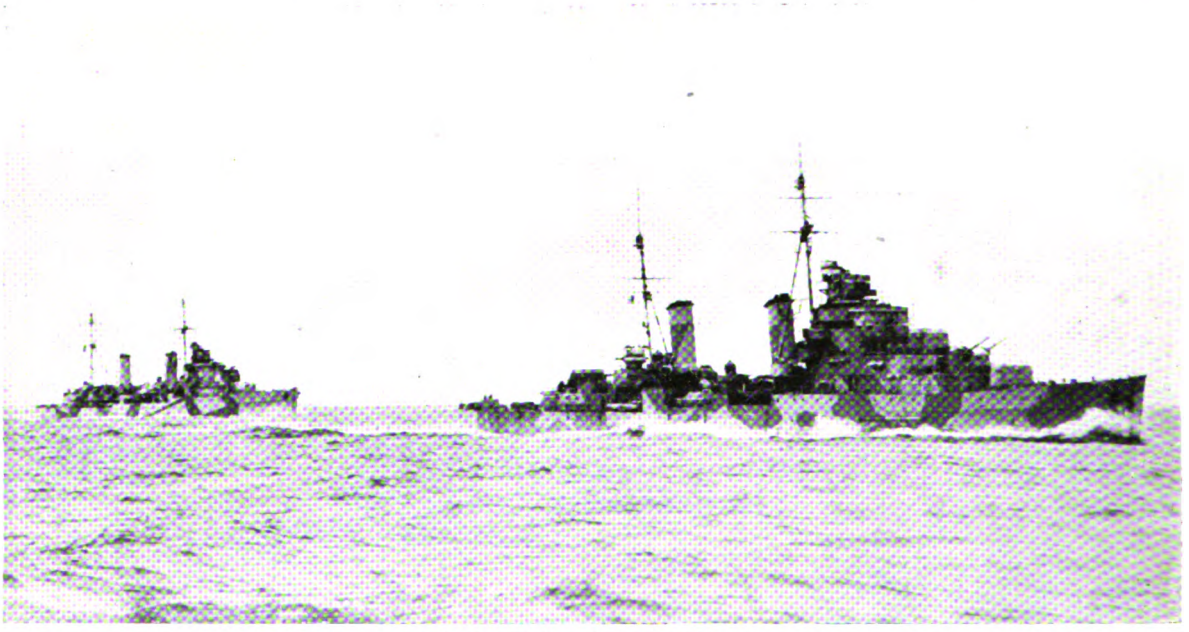
Americans using both ships and aircraft in their attempts to inflict ever more damage upon the enemy and to prevent the Japanese from being able to extricate a single damaged ship, other ships, PT boats and aircraft hunted in and out among the islands to the westward, sinking damaged enemy ships and picking off stragglers.

By Wednesday evening it was possible to say without any shadow of doubt that the Japanese navy's attempt to come to the rescue of Leyte had ended in ignominious and most costly failure. It was even becoming clear that the Japanese losses and damage were on such a scale that it was possible to say that the Japanese navy had shot its final bolt.

On October 30th the Navy Department in Washington was able to announce the full extent of the losses inflicted upon the enemy. This it did in the following terms :

"The Third and Seventh Fleets sank or damaged 58 Japanese warships in the battle of the Philippines, scoring one of the most crushing ocean victories of the war and perhaps the most decisive in naval history. The total damage inflicted on the Japanese fleet during the period October 22nd to 27th



CRUISERS ON ACTIVE SERVICE

The British cruiser *Euryalus*, with the East Indies Fleet, is shown leading another cruiser. The *Euryalus*, 5,450 tons, belongs to the *Dido* class and has five 5.25-in. dual-purpose guns, sixteen smaller guns, and six 21-in. torpedo tubes.

included :—Sunk—two battleships, four aircraft-carriers, six heavy cruisers, three light cruisers, three small cruisers or large destroyers, six destroyers. Severely damaged and may have been sunk—one battleship, three heavy cruisers, two light cruisers, seven destroyers. Escaped in a damaged condition—six battleships, four heavy cruisers, one light cruiser, ten destroyers."

It was later announced that, apart from small craft and the aircraft-carrier *Princeton*, the Americans had lost the escort aircraft-carriers *St. Lo* and *Gambier Bay*, the destroyers *Hoel* and *Johnston*, and the escort-vessel *Samuel B. Roberts*. Other ships had been damaged, but none of them very seriously. It had been a most sweeping victory.

From that moment there was no serious attempt on the part of the Japanese to interfere with naval forces with the American re conquest of the Philippines. This is not to say that the enemy relaxed his efforts, or that he ceased to suffer serious losses at sea. Time and again the Japanese ran convoys of supplies and reinforcements through to the Philippines, but almost always these convoys suffered such losses that the proportion which arrived was small, while further important inroads were made upon the rapidly dwindling sea resources of the Japanese.

A month after the great sea battles of the Philippines, for instance, General MacArthur's Headquarters

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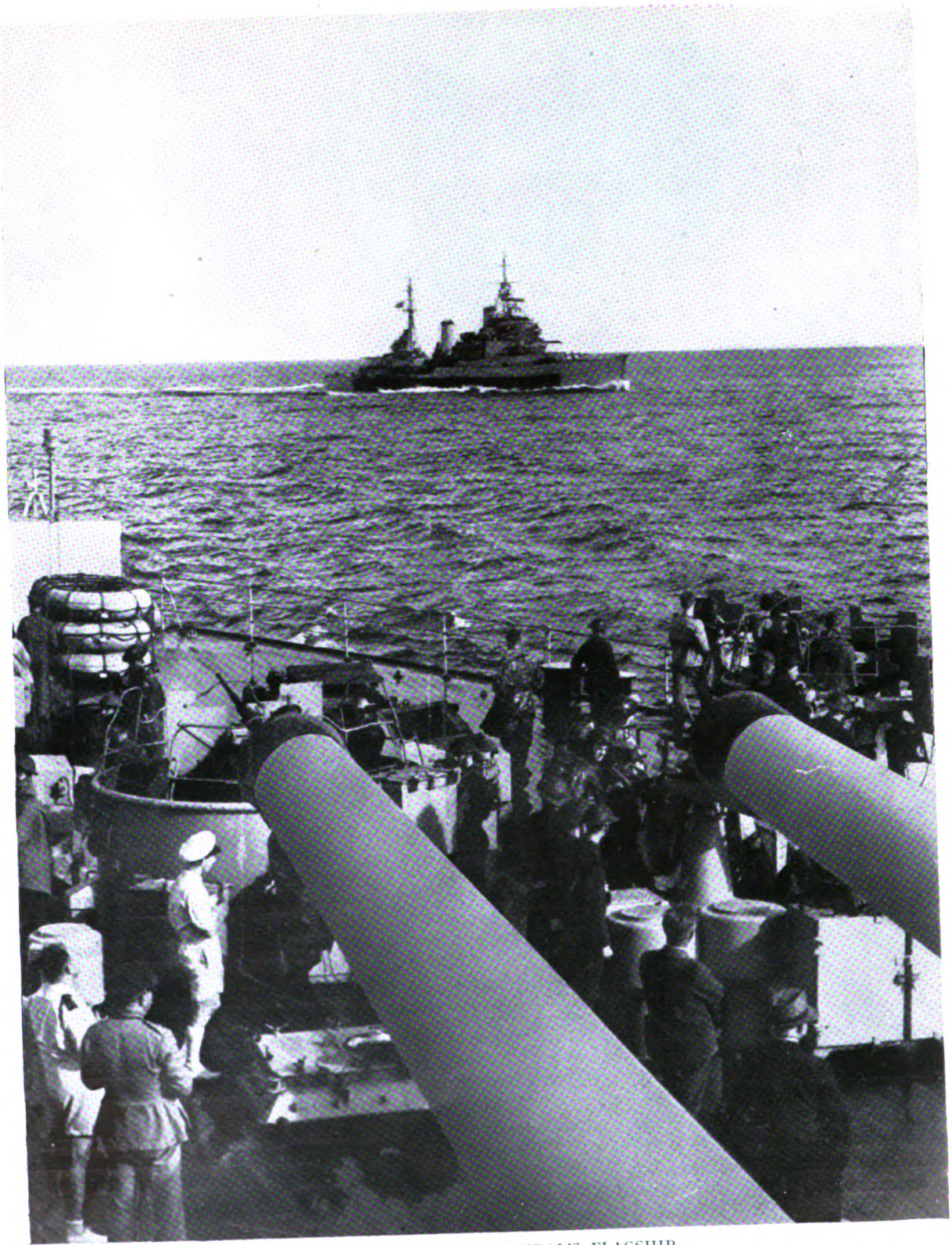

AS SEEN FROM THE ADMIRAL'S FLAGSHIP

The British 8,000-ton cruiser *Gambia* in New Zealand waters—one of a series of photographs taken from H.M.S. *Howe* during the battleship's visit to Auckland.

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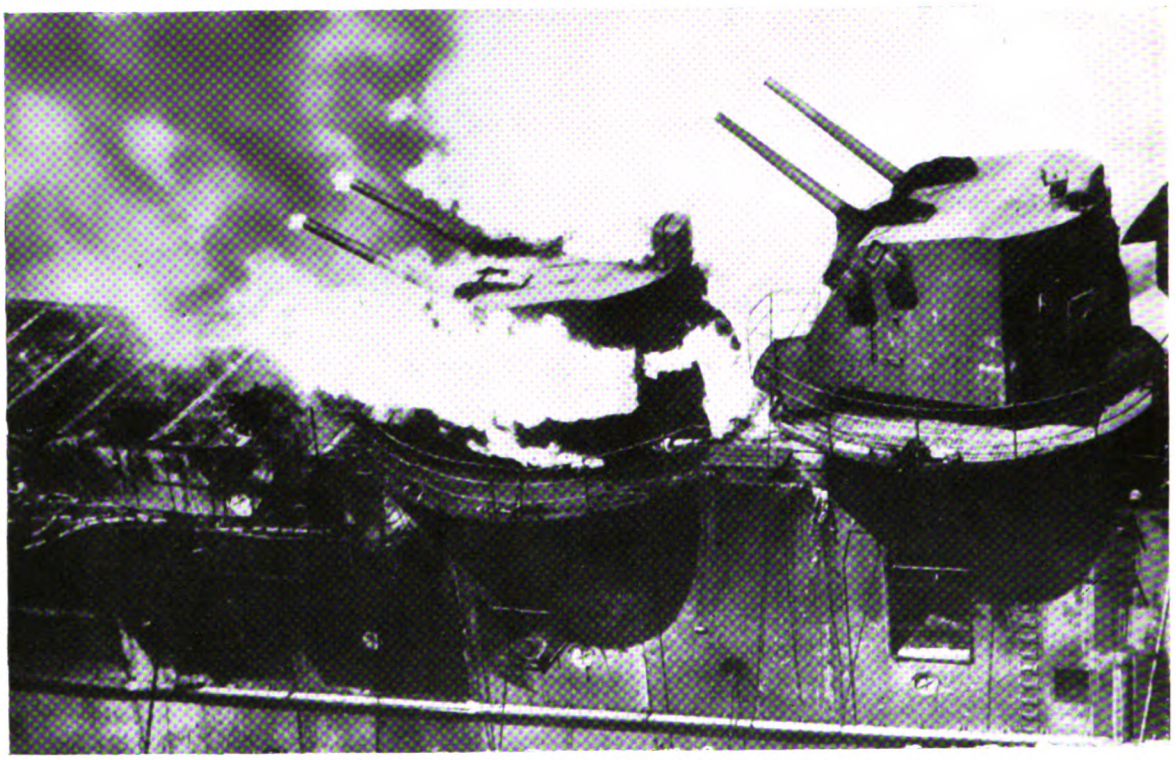

FLAMING HORROR AT SEA

The U.S. aircraft-carrier *Franklin* was hit by two 500-lb. armour-piercing bombs during an attack on the Japanese Fleet off the coast of Japan. Here flames are seen encircling one of the 5-in. gun-turrets.

was able to announce: "Hitting their second Japanese reinforcement convoy in two days as the enemy made persistent attempts to reinforce Leyte, American aircraft sank three troop laden vessels out of four and left the fourth burning off Cebu. It is estimated that 2,000 Japanese soldiers and all the supplies the ships carried were destroyed. This is the fourth enemy reinforcement convoy which has been caught and destroyed by American land and carrier-based aircraft. A total of 16 enemy transports, aggregating 65,000 tons, have been sunk, with 17,000 troops on board, together with 14 escorting warships."

On the very same day Admiral Nimitz announced: "For the fifth time in three weeks Pacific aircraft-carriers attacked Luzon Island in the Philippines in major force, battering Japanese shipping and airfields in one of the heaviest blows of the month. They sank 18 ships and small craft, including a heavy cruiser and a destroyer, and damaged five other vessels—a total of 23 sunk or damaged. On the ground and in the air carrier-planes destroyed 64 enemy aircraft; anti-aircraft fire knocked down another 8 planes."

So the struggle for the reconquest of the Philippines went on, with the enemy trying desperately to retrieve a position which had already been lost by the defeat of the Japanese navy in October. On January 9th, 1945, the Americans landed at Lingayen Gulf on the main island of Luzon, and by February 13th the ships of the American fleet were bombarding the forts at the entrances to Manila Bay. Two days later American troops again set foot on Corregidor—the great island fortress which guards the entrance to Manila Bay, one of the finest natural harbours in the world.

On that same day two other events of far-reaching importance took place. Admiral Nimitz moved his advanced headquarters to the reconquered American island of Guam; and aircraft from carriers of the American Pacific Fleet carried out an attack on Tokyo. Coming events were beginning to cast their shadow.

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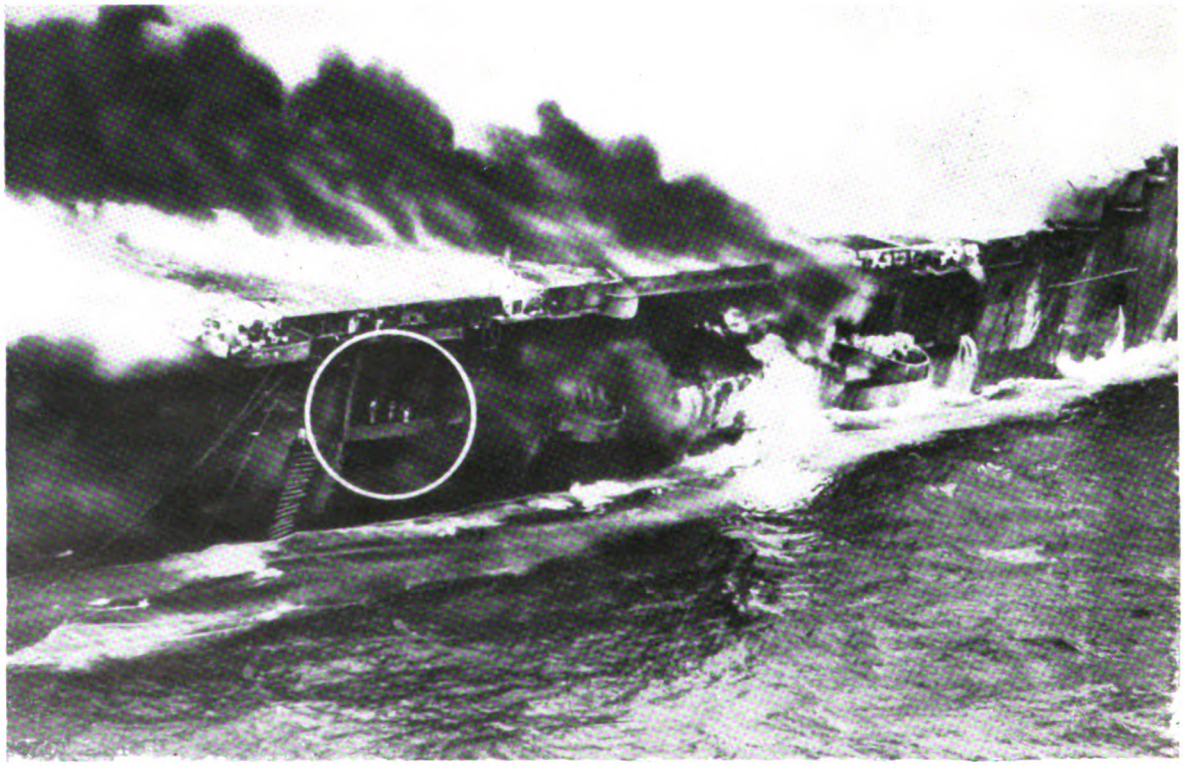
CHAPTER XV

THE peninsula of Bataan, scene of the immortal stand of General MacArthur's troops against overwhelming Japanese odds, fell to the Americans on February 17th, 1945, and eight days later Manila was formally occupied by General MacArthur's troops. The campaign for the reconquest of the Philippines was close to its end, although much mopping-up of scattered Japanese forces remained to be done.

The reconquest of the Philippines was, however, not an end in itself. It was but one step in the great Allied strategy against Japan—a strategy which was unfolding ever more rapidly, and thereby ensuring that the enemy should have no opportunity for even partial recovery from a blow in one area before they found themselves reeling under heavy blows in a widely different area. Japan was paying the price, not only of widespread conquest, but of the defeat of her fleet in the battles of the Philippines. It would hardly be an exaggeration to say that the rest of the story of the war against Japan is a story of fanatics trying to hold overseas possessions and sea communications by suicide squads and suicide weapons in default of the sea power which could alone have made these possessions and the island empire of the Rising Sun in any way secure.

The Allied blows against the Japanese system of fancied security behind screens of strongly fortified islands increased both in weight and in rapidity of delivery. One can imagine the Japanese High Command just beginning to face up to the fact, after the fall of the Bataan Peninsula, that Manila must inevitably fall to the Americans in a few days, when they found themselves faced with reports that the Americans had forced a landing on the island of Iwojima. That American landing actually took place two days after the fall of Bataan and six days before Manila surrendered to General MacArthur's forces.

Iwojima is an island of the Volcano Group, which forms a short extension of the Bonin Islands—a chain which, with the Volcano Islands extension, runs for 750 miles due south from Tokyo Bay. Not



AWAITING RESCUE FROM A BLAZING FURNACE

Some of the crew of the *Franklin* awaiting rescue from their blazing ship. Over 1,000 of her men suffered when the carrier was hit, but she managed to limp home to New York to undergo repairs.

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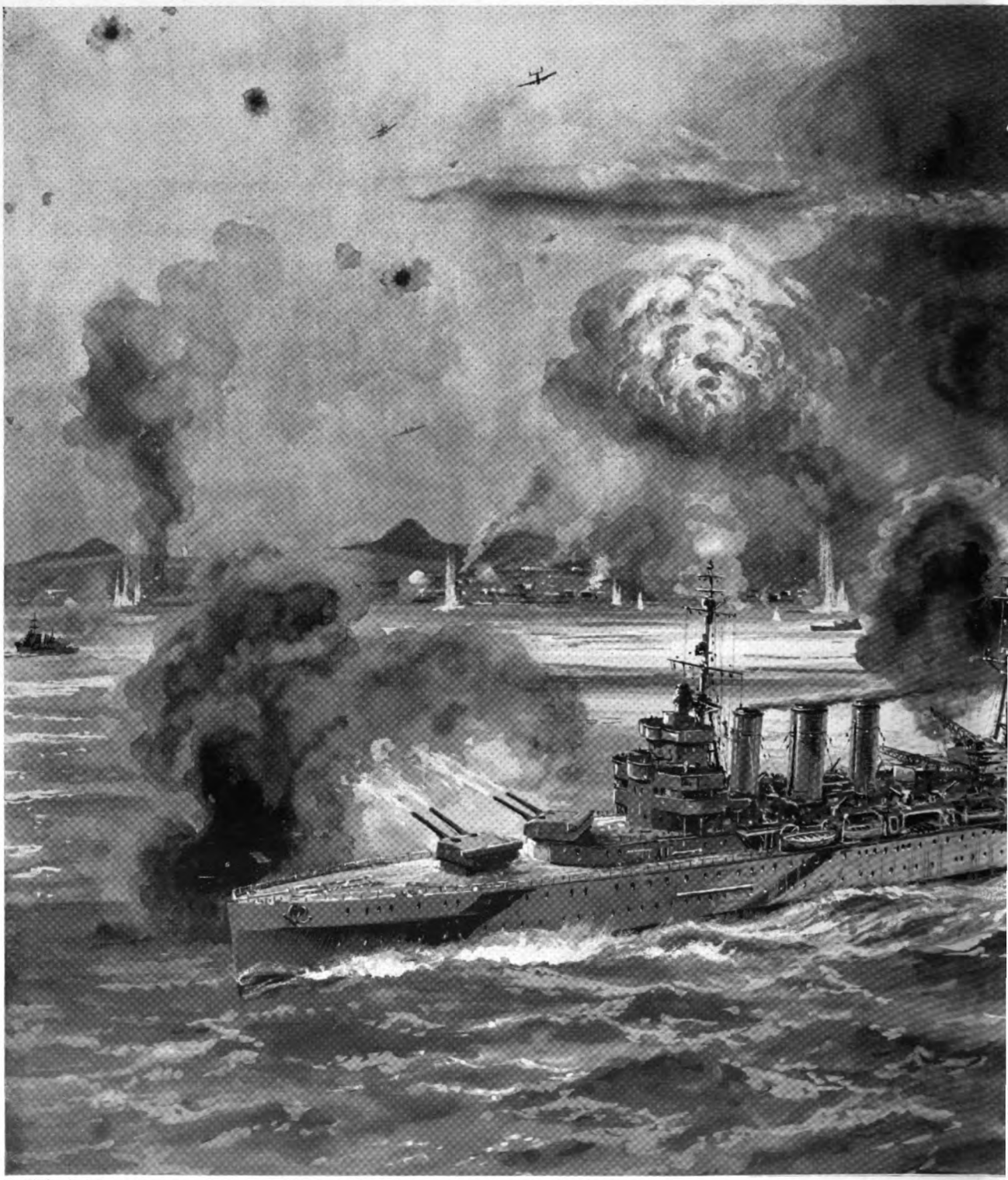

Specially drawn

COMBINED NAVAL OPERATIONS BEFORE

The net gradually closed round the Japanese aggressors—their ill-gotten gains were being wrested from them bit by bit. Following the landings on Tarakan and Labuan Islands, and in the Brunei area, another successful landing in Borneo was made by Australian forces on Sunday morning, 1st July, 1945. This was at Balikpapan, a big oil centre on the east coast, facing Celebes across the Straits of Macassar. They quickly secured a hold on three miles of beach and within a few days advanced several miles and captured

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by MONTAGUE B. BLACK, F.R.S.A.

THE LANDINGS ON BALIKPAPAN

important airfields. To soften the Japanese defences before the landing a naval bombardment was carried on for 15 days, and an air bombardment for a month. Over 300 ships took a hand in the invasion operations, including elements of the Royal Netherlands Navy and the Australian Navy, the cruisers *Shropshire* and *Hobart* among them. In this drawing our special artist, Montague B. Black, F.R.S.A., gives a vivid impression of the bombardment by the cruisers *Shropshire*, *Hobart* and the destroyer *Arunta*.

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only was Iwojima by far the nearest point to the Japanese main islands at which American troops had yet effected a landing, but it had a further strategic significance.

The whole of the defensive conception of the Japanese High Command, had been based upon the screens of islands behind which the Japanese war lords had thought that they could embark with impunity upon aggression and the formation of a so-called "co-prosperity sphere." The outer, or eastern-most of these island screens consisted of the Bonin chain, the Marianas and the Carolines. The inner or western chain consisted of the Ryukyu and Sakishima groups, trailing away south-westwards to Formosa and the Philippines.

The southern end of both screens already lay in American hands—Guam at the southern end of the Marianas and Manila in the Philippines. Both of these American footholds, however, were approximately

BATTLE SCENE IN THE PACIFIC

With the way paved by an intensive barrage from ships of the U.S. 7th Fleet, Navy landing craft streak towards the east coast of Cebu Island and meet little resistance.

1,500 miles from Tokyo. The American landing on Iwojima halved this distance, and threatened to roll up the last of the chain of islands forming the eastern screen.

Iwojima is a small island, but its strategic importance was immense. This was outlined by Fleet Admiral Ernest J. King, Commander-in-Chief of the United States Fleet and Chief of Naval Operations, in his report to the U.S. Secretary of the Navy in the following terms :

"The diminutive size of Iwojima and its general barrenness, lack of natural facilities and resources should lead no one either to minimise the importance of capturing it or to deprecate as unreasonable and unnecessary our heavy losses in doing so. It was important solely as an air base, but as such its importance was great. Not only was the pressure of air attack by our Marianas-based B-29's (Super-Fortresses) materially intensified by the availability of Iwo for topping them off with fuel and for supplying them with fighter cover from there on, but also there was an increase in combat effectiveness of the B-29's due to the heightened morale of personnel, heavier bomb loads, and decrease in abortive flights. There was, moreover, a substantial saving in valuable life in the number of B-29's which would have

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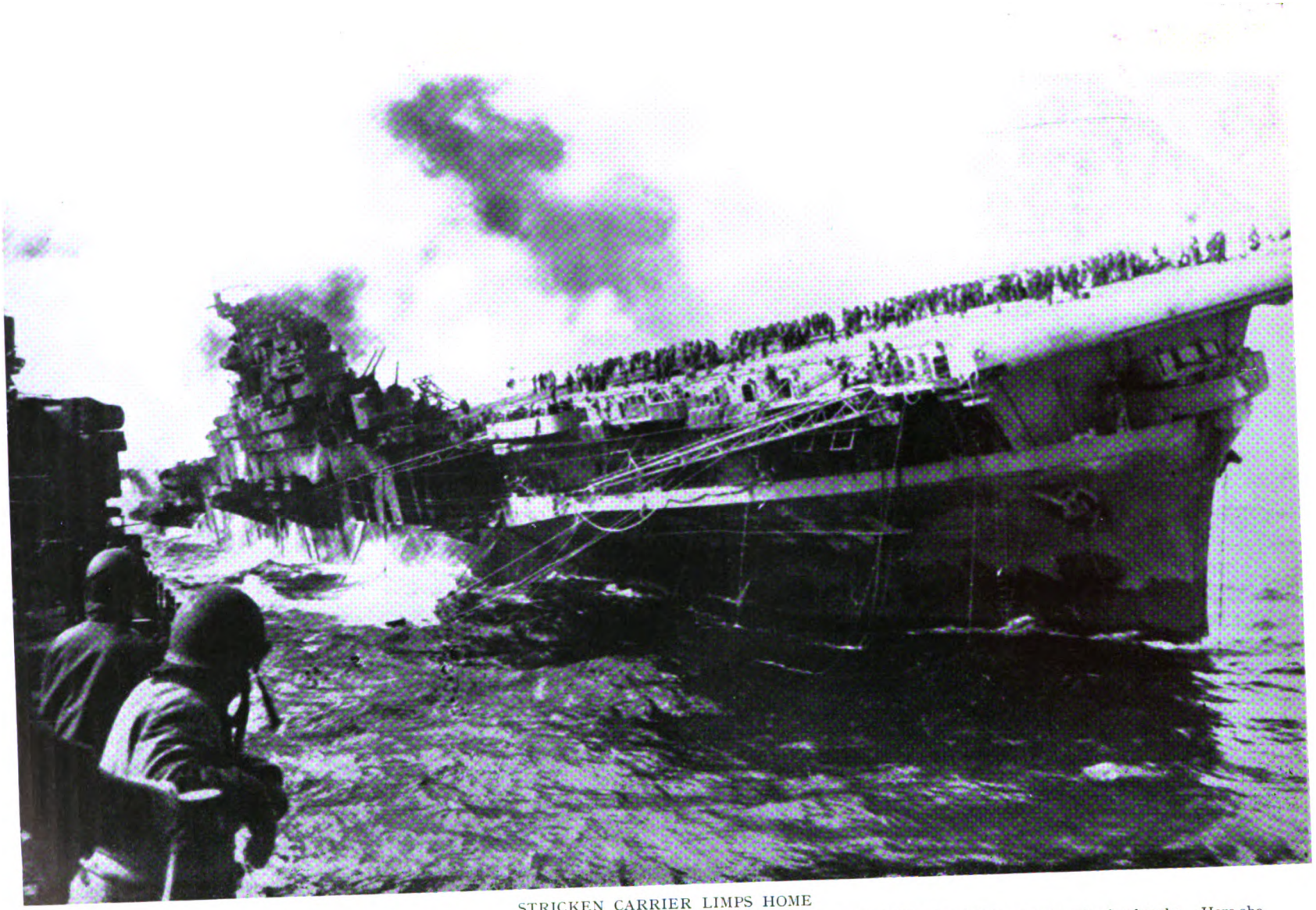

STRICKEN CARRIER LIMPS HOME

Another wonderful photograph of the U.S. aircraft-carrier *Franklin* which managed to reach New York after being hit by two 500-lb. armour-piercing bombs. Here she is seen listing heavily as she burns off the Japanese coast, with her crew orderly lining the decks. A number of magazines were exploded and there were more than 1,000 casualties among the crew.

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ITS LAST FEW MOMENTS

A blazing Japanese plane, hit by anti-aircraft fire, passing over a U.S. Navy escort-carrier as it plunges towards the Pacific waters. The enemy expended a large number of planes and airmen in a vain attempt to stem Allied progress.

been shot down over Japan had there been no fighter cover, and in the number which would have been lost at sea had Iwojima not been available for emergency landings. It is estimated that the lives saved through this latter factor alone, subsequent to the capture of Iwojima, exceeded the lives lost in the capture itself."

Having regard to the immense strategic importance of this little outlying island, it is not surprising that it proved a very tough nut to crack. And in the defence of the island against invasion the topography of the island materially assisted the Japanese. The island had no long coastline which would have given the invading force a choice of landing points where the lightest opposition might be expected. Landing was feasible on only two beaches. Both of these were small, and they were so situated that a single defensive organisation could oppose an assault against either beach separately or against both beaches simultaneously.

These geographical factors had been well exploited by the Japanese garrison. Their defensive organisation, in fact, was by far the most complete and effective that had been encountered in the Pacific war. The beaches were flanked by high ground, and artillery, mortars and rocket guns were well concealed in positions from which they could fire against either beach, while good observation posts were available in the hills at each end of the island. The rugged volcanic crags and steep gullies running down to the sea on all sides of the central plateau gave excellent cover and lent themselves to the building of underground positions.

The Japanese had made full use of these facts and their fondness for burrowing in war. They had gone to ground most effectively. That was not surprising, for there could be no question but that the enemy fully expected the attack on Iwojima as the next step in carrying the war to the Japanese main islands. Neither strategic nor tactical surprise was possible. With the Marianas and with most of the Philippines in Allied hands it was obvious that the next Allied move must be against the chain of islands running south from Japan, and in this chain of islands Iwojima offered the greatest prize, both by reason of its geographical position and of the airfields built upon it.

Iwojima was, of course, subjected to a tremendous "softening up" before the landings. This "softening up," which was referred to in the official communiqué as "the most intensive neutralisation campaign

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of the Pacific War," was carried out by land-based aircraft operating from the Marianas, by great numbers of carrier-borne aircraft from Vice-Admiral M. A. Mitscher's force of fast aircraft-carriers, and by intensive bombardments by battleships, cruisers, destroyers, and landing craft armed with banks of rocket guns.

Then, on February 19th, the landing was effected, under intense support from aircraft and from the guns of the ships, by the United States Marines. More than 800 ships took part in this invasion. It was only to be expected that there should be losses among the ships during this operation, but the most important loss was that of the aircraft-carrier U.S.S. *Bismarck Sea*, which occurred two days after the landing.

It was on February 21st, too, that serious damage was suffered by the big aircraft-carrier U.S.S. *Saratoga* by no less than seven direct hits.

It was five o'clock in the afternoon, and the *Saratoga*, which was in company with a Task Group of fast aircraft-carriers north-east of Iwojima, was flying off aircraft when nine or ten Japanese bombers suddenly closed in. The pilots of these enemy aircraft were clearly on "suicide missions." Four of the Japanese aircraft were shot down into the sea by fighters or by the anti-aircraft fire of the ships' guns. Four others, however, managed to crash and bomb the ship in so doing. Yet another aircraft, shot into the sea close alongside the ship, ricochetted off the water and exploded, tearing a large hole in the ship's side. One bomb blew a hole in the hull below the waterline, rupturing many fuel pipes and giving the ship a six-degree list.

The whole of the forward part of the flight deck was smashed and useless. Wreckage and fuel were scattered all over the ship and fires broke out everywhere. Worse still, one of the Japanese suicide pilots had crashed through the ship's side into the hangar and there exploded, starting a great fire.

Despite this damage, the *Saratoga* was able to increase speed while great efforts were made to get

A JAPANESE PLANE HITS THE OCEAN

Falling short of its target, a Japanese suicide plane dives into the ocean near a battleship after being riddled by ack-ack fire from several vessels during an attack on the task force off Okinawa.

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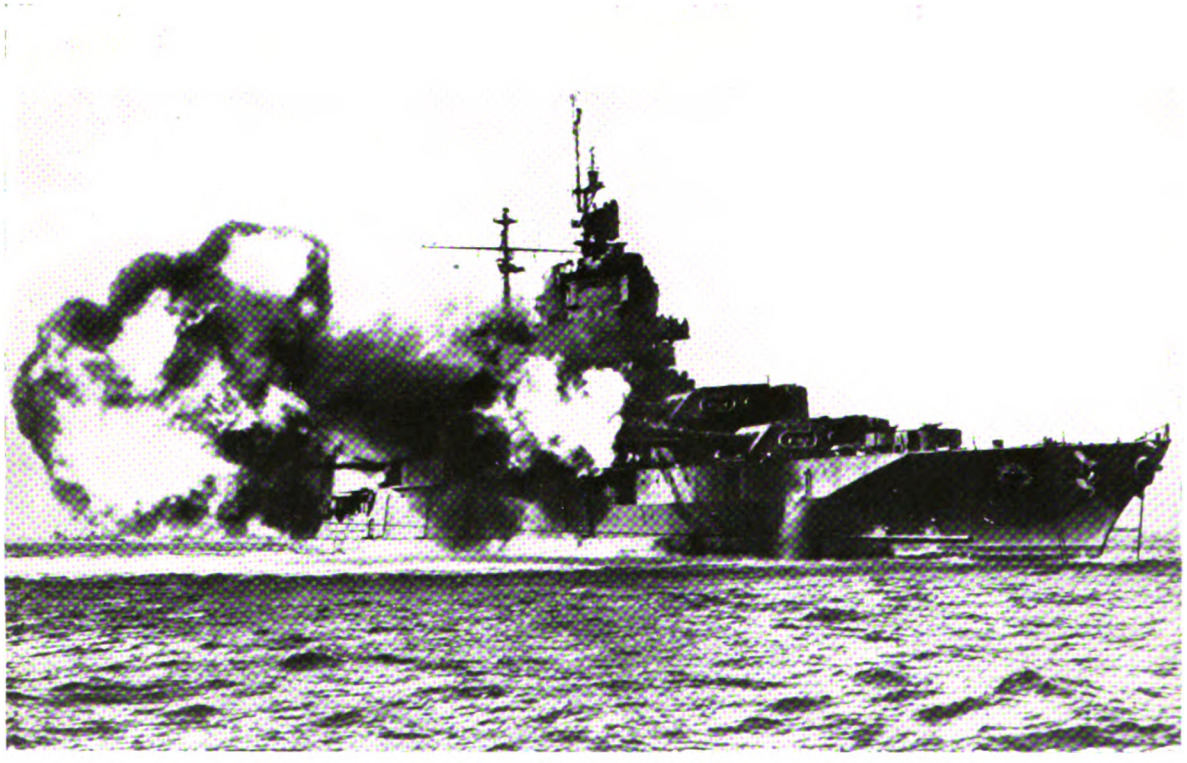
the fires under control. The crew were just beginning to get the upper hand when more Japanese aircraft appeared, and one of these succeeded in scoring yet another hit before crashing into the sea on the port side. The damage caused by this bomb, although severe, was soon brought under control and it did not, fortunately, add to the fires.

While most of the crew were fighting the fires, other men worked feverishly to get the after part of the flight deck clear so that the aircraft in the air, which had been circling round and round and were beginning to run perilously short of fuel, could land. This was duly done and the aircraft were landed on without mishap. The *Saratoga*, with a casualty list of 123 killed and 192 wounded, made her way to an advanced base for temporary repairs.

Widespread operations were undertaken in support of the invasion of Iwojima. Most important of these were the attacks made by aircraft operating from the fast aircraft-carriers on Japanese airfields



BIG GUNS IN ACTION

A striking photograph of an American battleship firing on Japanese positions on Okinawa, largest of the Ryukyu Islands, and of great strategic value because it is less than 400 miles from Japan.

and installations in the Tokyo area. These were designed to keep down the Japanese air attacks on the forces invading Iwojima, some 650 miles farther south, and they were exceedingly successful in this task

The first such attack, on the Tokyo and Yokohama areas, was launched from the aircraft-carriers on the day that the American Marines landed on Iwojima. This attack achieved complete tactical surprise and was described by Admiral Nimitz in his congratulatory signal to Admiral Spruance and Vice-Admiral Mitscher as a "decisive victory." The naval aircraft achieved wonders. In their assault, which was kept up for two days, they destroyed no fewer than 509 Japanese aircraft for the loss of 49 of their own. In addition, they sank four warships and ten merchant vessels and inflicted serious damage upon airfields and aircraft factories. Although the aircraft-carriers, supported by Admiral Spruance's Fifth Fleet, operated close off the Japanese coast for two days and nights, not a single American ship suffered damage from enemy action.

On the island of Iwojima, however, despite the weight of the air and sea bombardments to which

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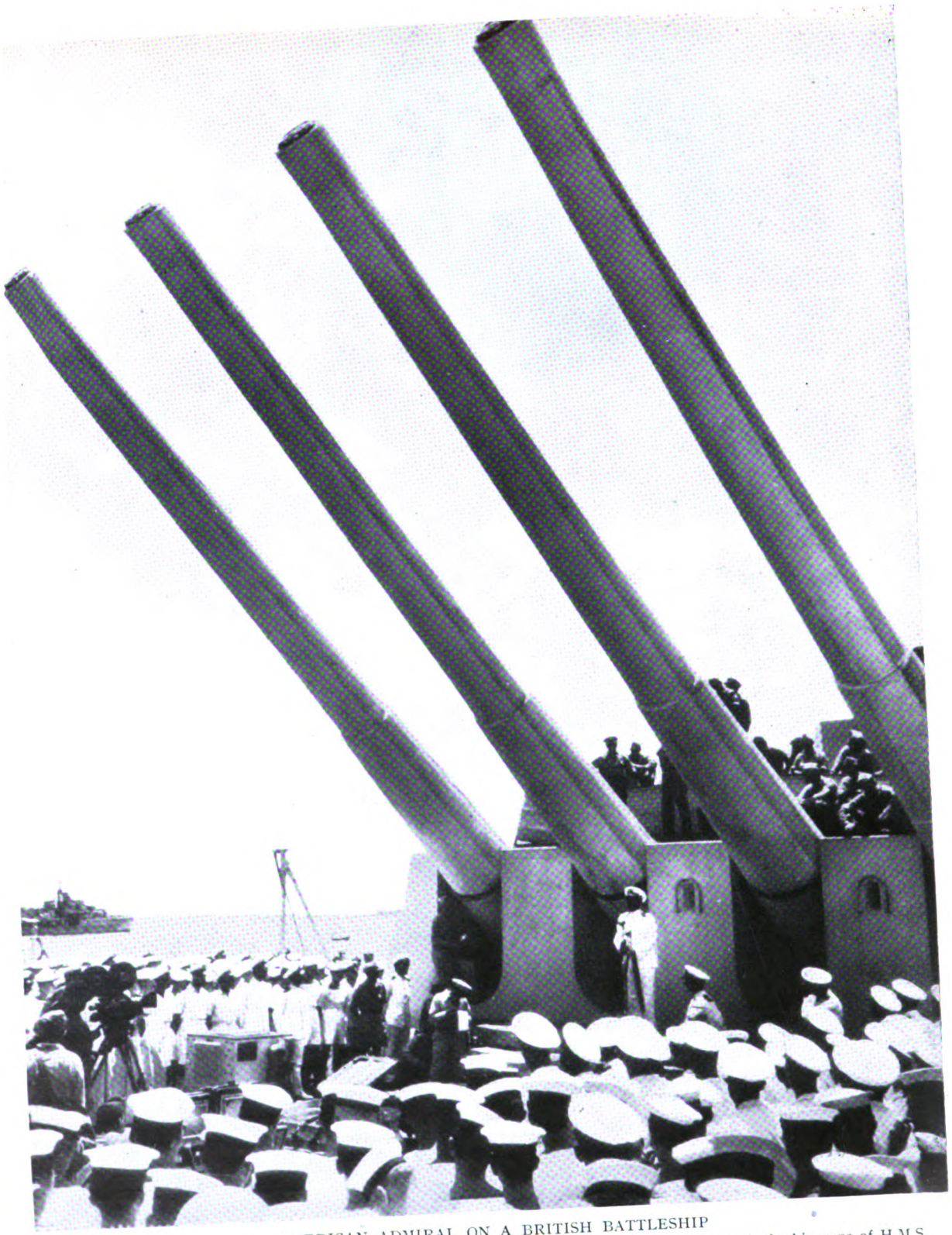

AMERICAN ADMIRAL ON A BRITISH BATTLESHIP

A picture symbolic of Allied might and Allied unity—Admiral Chester Nimitz, standing beneath the big guns of H.M.S. *King George V*, addresses the officers and men of the mighty battleship at Guam, his advanced headquarters.

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UNITS OF THE BRITISH EASTERN FLEET

Taken from beneath the guns of H.M. battleship *Queen Elizabeth*, the photograph shows H.M.S. *Valiant*, a sister ship of the *Queen Elizabeth*, and the French battleship *Richelieu*, at dawn.

the well dug-in Japanese were subjected—the ships of the American Navy used no less than 16,000 tons of gun ammunition in these bombardments at Iwojima—the progress of the United States Marines was painfully slow. As Fleet Admiral King said in his report: "The defenders were dedicated to expending themselves—but expending skilfully and protractedly in order to exact the uttermost toll from the attackers. Small wonder then that every step had to be won slowly by men inching forward with hand weapons, and at heavy costs. There was no other way of doing it."

At last, however, the gradually dwindling pockets of Japanese resistance had been mopped up. On March 14th the American flag was raised officially on the island and the establishment of a military government was proclaimed. The capture of that small but immensely important Pacific island had taken 26 days of desperate fighting. More than 20,000 Japanese troops had been destroyed, while the American casualties ashore had amounted to 20,196, of whom 4,305 had been killed in action.

The American Navy were determined to give the Japanese no respite and to deprive the enemy of the ability to make any effective counter-attack either against Iwojima itself or against the supply and troops convoys going to and from that island while the military garrison was moving in and the combat divisions of United States Marines were being withdrawn for rest and re-grouping.

To this end American naval aircraft operating from Vice-Admiral Mitscher's force of fast aircraft-carriers swept over southern Japan and the Inland Sea. On Monday, March 19th, these aircraft gained another notable victory. Not only were at least 475 Japanese aircraft destroyed, but great havoc was spread among the remnants of the Japanese navy, the ships of which were caught in their bases in the Inland Sea. It was conservatively estimated that these air attacks resulted in damage to between fifteen and seventeen Japanese warships, among them at least one—and possibly two—battleships.

It must be remembered that at this critical stage in the development of the war against Japan damage to a ship, provided that it was of sufficient gravity to impair her steaming qualities or fighting efficiency, could be accounted almost as great a success as its complete destruction. Events were moving rapidly, although it was not at that time thought that the Japanese war would so soon come to an end. The Allies were embarking upon a whole series of vast and strategically linked operations, and the smaller the scale of Japanese interference with these operations the quicker and more economically they would

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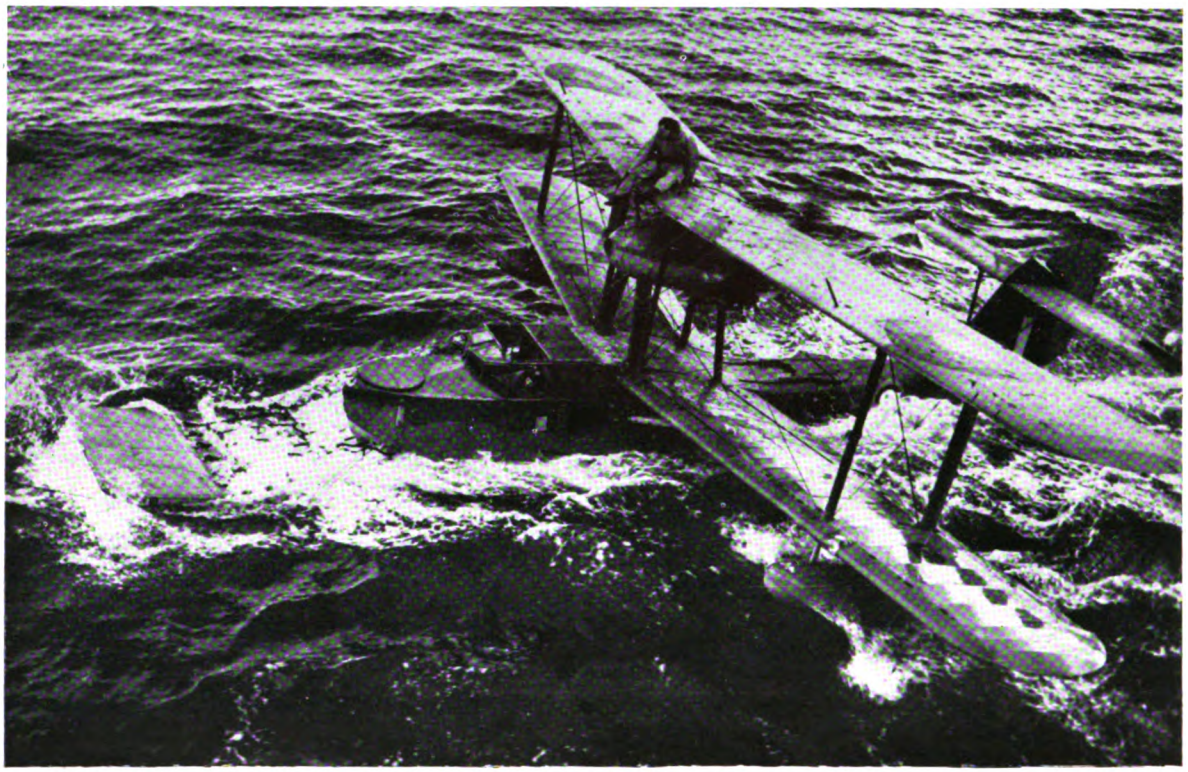

TOWING A WALRUS AIRCRAFT FOR HOISTING

A Walrus aircraft being towed into position for hoisting. In the "towed net" method of recovery aircraft taxi on to a towed net and hook on, and are then hoisted inboard when in position under the hook.

be concluded. Another important factor was that it was now proved that the shipyards and factories of Japan were open to air attack—attack the scale of which would be very greatly increased as soon as the airfields at Iwojima could be brought into operational use for the Super-Fortresses of the Strategical Air Force. This meant that repairs to ships would be greatly impeded, and that a damaged ship would therefore be out of action for a much longer period.

There was, of course, considerable submarine activity in connection with the Allied advance of over 700 miles from the Marianas to the Volcano Islands. The Japanese, of course, sent submarines to try to inflict the maximum of loss and damage upon the great concourse of shipping which was engaged in the invasion of Iwojima. Thanks, however, to the vigilance of the American destroyers—and possibly in some degree to the fact that the Japanese had by this time lost most of their best and most experienced submarine officers and had apparently been unable to replace them with equally skilled men—the Japanese submarines scored no successes, while several of them were destroyed by the American patrols.

The American submarines, meanwhile, were having to penetrate deeper and deeper towards the Korean and the China coast in search of targets. This fact is well illustrated, both by statistics and by the very gallant action of the United States submarine *Tirante* in April 1945.

During the year 1944 the Japanese mercantile marine had suffered a crippling blow at the hands of the submarines. Its losses amounted in that year to 492 ships with a total tonnage of 2,387,780 tons. And this figure takes no account of the destruction, chiefly by gunfire, of large numbers of small vessels of less than 1,000 tons. Yet in 1945, with more Allied submarines operating, the equivalent figures for losses imposed upon Japanese shipping were only 132 ships totalling 469,872 tons.

The way in which the American submarines were forced to hunt for targets in dangerous inland waters was exemplified by the exploit of the submarine *Tirante*, which succeeded in penetrating the defended and closely patrolled anchorage in Quelpart Island—off the southern end of Korea—and sinking a big 10,000-ton tanker and two escort-vessels, all of which were lying at anchor in fancied security.

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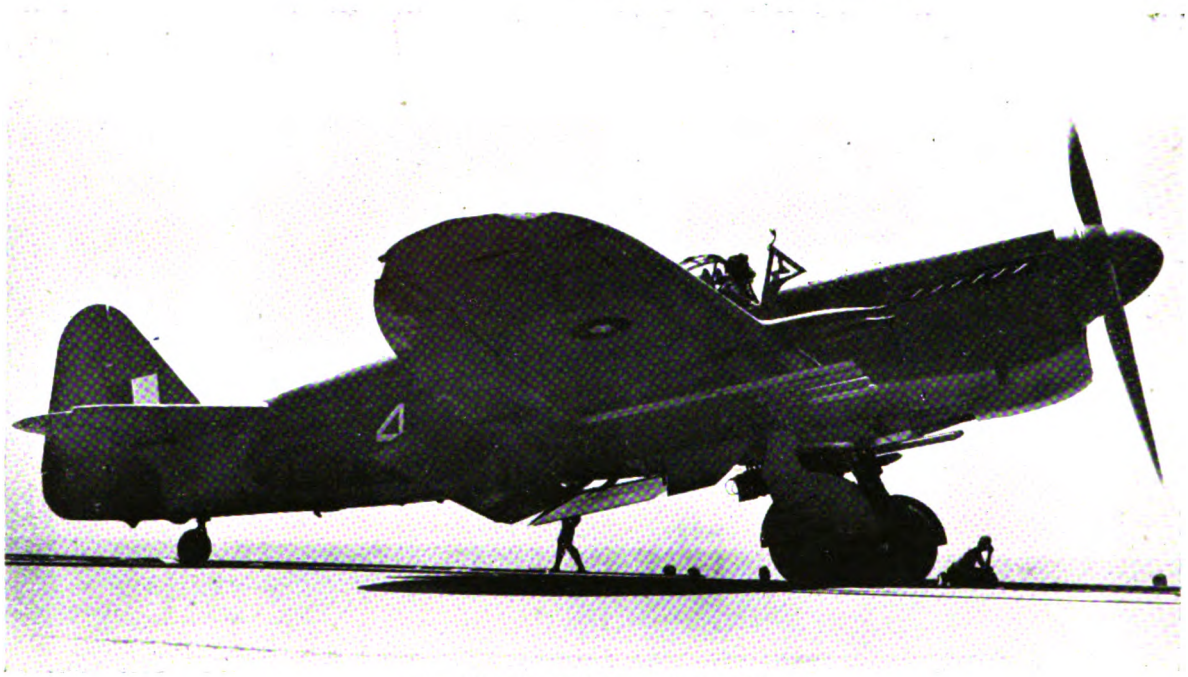

ALL READY FOR THE TAKE-OFF

A rocket-carrying Firefly awaiting the signal to take off from the flight-deck of one of the Royal Navy's big aircraft-carriers far away in the Pacific.

CHAPTER XVI

THE capture of Iwojima had advanced the eastern part of the strategic front against Japan to within 650 miles of Tokyo. The next step was to achieve a like advance of the western end of this imaginary line. Preparations for this next step were already in hand, and no sooner had Admiral Mitscher's fast aircraft-carriers concluded their tasks of supporting the Iwojima operations than they steamed away to the westward to carry out the first part of the plan for the next step.

This step was the invasion and conquest of Okinawa—a large 65 mile long island in the Ryukyu chain and lying roughly half way between Formosa and Kyushu, the southernmost of the Japanese home islands.

This step had been directed by the Joint Chiefs of Staff in the full realisation of its difficulty and complexity. The advantages to be gained by the capture of Okinawa were, however, so great that all the difficulties were accepted. Okinawa is the largest island of the Ryukyu group and it contained many sites for airfields capable of use by even the largest types of aircraft. Establishment of the Allies on Okinawa would thus give them a great air base within 350 miles of industrial Kyushu, so that every bomber sent on a mission against targets in that area could be given fighter protection throughout its flight. Okinawa, moreover, possessed several excellent anchorages and ships and aircraft using that island could certainly dominate not only the Japanese trade route to the Indo-China and Malaya areas in the south, but also the all-important Japanese trade route from Nagasaki to Shanghai.

The prize was certainly great, but, as Fleet Admiral King put it in his report: "From many standpoints the Okinawa operation was the most difficult ever undertaken by our forces in the Pacific. It was defended by about 120,000 men with tanks and artillery. As possible reinforcements there were some 60,000 troops in various other islands of the group, plus much larger forces in nearby Formosa, Kyushu and the Shanghai area. . . .

"The most serious threat to us, however, lay in the very factor for which we had initiated the operation, namely the short distance from Okinawa to the Japanese homeland, where lay the main reserves of air and naval power. Just as we would be able to strike Japan with better effect after securing Okinawa, the Japanese could strike us while we were attacking that island. Japan's naval strength had been

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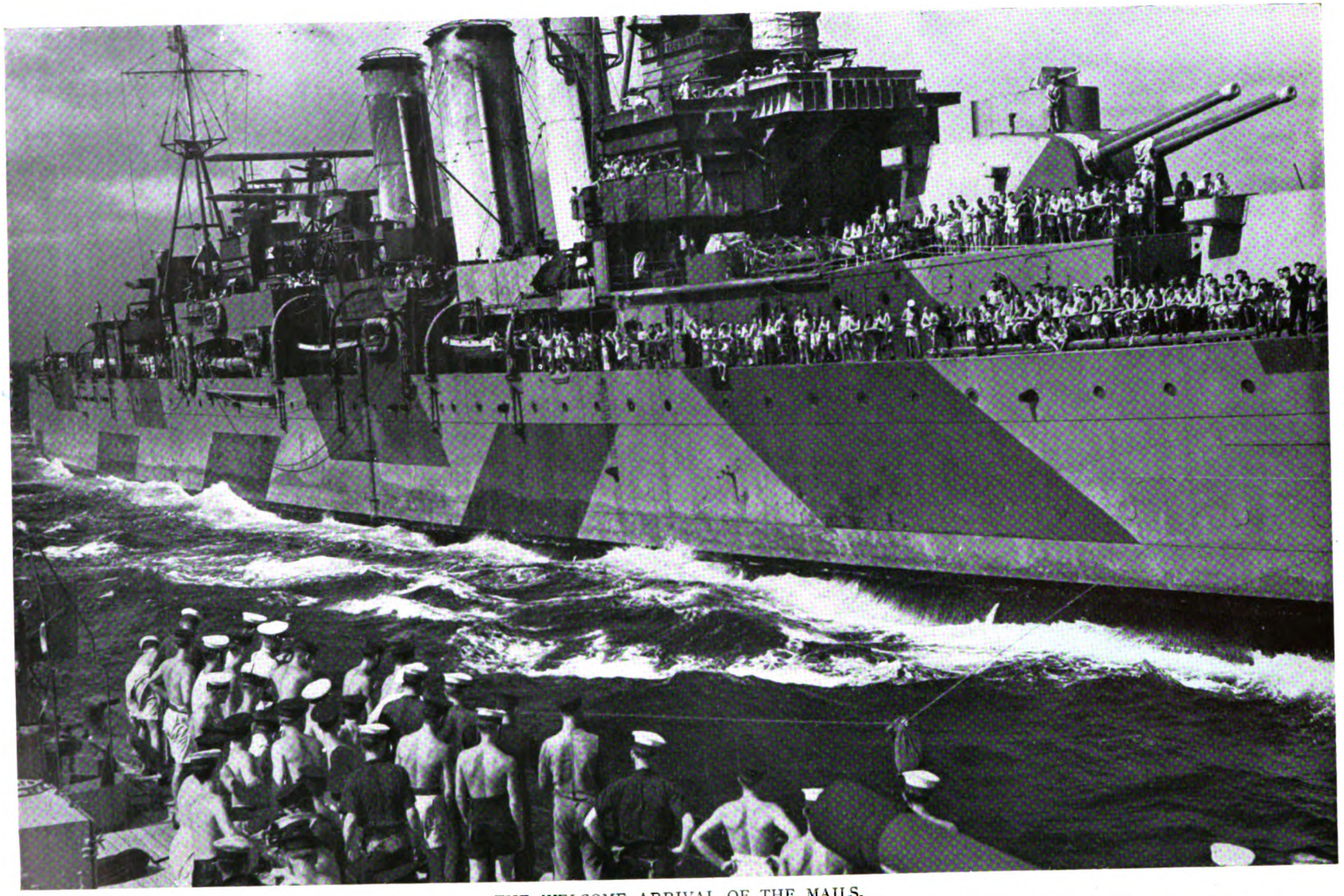

THE WELCOME ARRIVAL OF THE MAILS.

All the sailors are agog with excitement as H.M.S. *Devonshire*, London Class cruiser, passes mails in the Indian Ocean to H.M. cruiser *Mauritius*, from which this photograph was taken.

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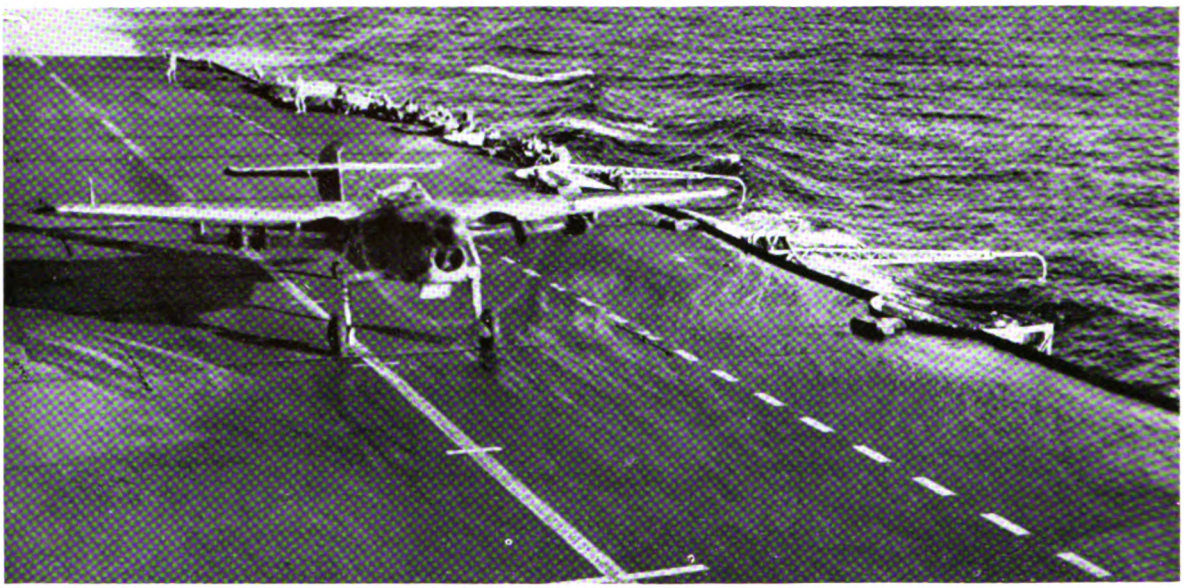

LEAVING FOR OPERATIONS FAR AFIELD

This photograph, taken aboard a British aircraft-carrier, shows a Barracuda starting off to attack the Japanese somewhere in the Pacific—a dramatic but everyday scene in Far Eastern waters.

so reduced that it could not hope for success against our own in a decisive action; but hit-and-run raids, or perhaps forlorn-hope, honour-saving attempts, were a possibility. Air attack, particularly of the suicide variety, was the greatest menace, since the Japanese airfields within easy range of Okinawa were too numerous to permit more than their partial and temporary interdiction by our own air strikes against them. Severe damage and losses, therefore, had to be expected and accepted as the price of our success."

This latter factor led to the planning of a series of supporting operations, the main object of which was to neutralise, as far as possible, the enemy air forces and airfields both to the north-east and to the south-west of Okinawa. It was in the latter of these two series of supporting operations that a powerful Task Force of the British Pacific Fleet under the command of Vice-Admiral H. B. Rawlings played a most important part. The Japanese air force and air bases were entrusted to Rear-Admiral Vian's aircraft-carriers, supported by the battleships, cruisers and destroyers of Vice-Admiral Rawlings' Task Force. The larger force of American fast aircraft-carriers commanded by Vice-Admiral Marc Mitscher, also supported by battleships, cruisers and destroyers, was allotted the task of dealing with the Japanese air force and airfields in Kyushu.

The whole of the operations for the capture of Okinawa, which entailed the work of 318 warships and nearly 1,200 auxiliary vessels, not counting the very large number of personnel landing craft of various types, was under the command of Admiral R. A. Spruance, who commanded the United States Fifth Fleet.

The island of Okinawa is roughly divided into two almost equal parts by a narrow neck of land. The northern part of the island is mountainous, rugged, wooded, and undeveloped. The southern part, by contrast, is mostly rolling country which has been developed and which contained the island's five airfields as well as the capital city of Naha and the strongest of the island's defences. It was therefore against this southern end of the island that the initial thrust of the invasion was planned to take place.

The plan for the invasion of Okinawa consisted of a landing on a four-divisional front on six miles of beaches on the south-west shore of the island, where there would be a lee to protect the landing craft and ships from the north-east trade winds. These beaches were close to the Yontan and Kadena airfields, and it was hoped that they would be captured in the early stages of the invasion. The plan provided for the two centre divisions of the initial landing force to strike directly across the island and cut it in half, thus disorganising the defence as a whole. The left hand division was to swing to the northward and the right flank division to the southward.

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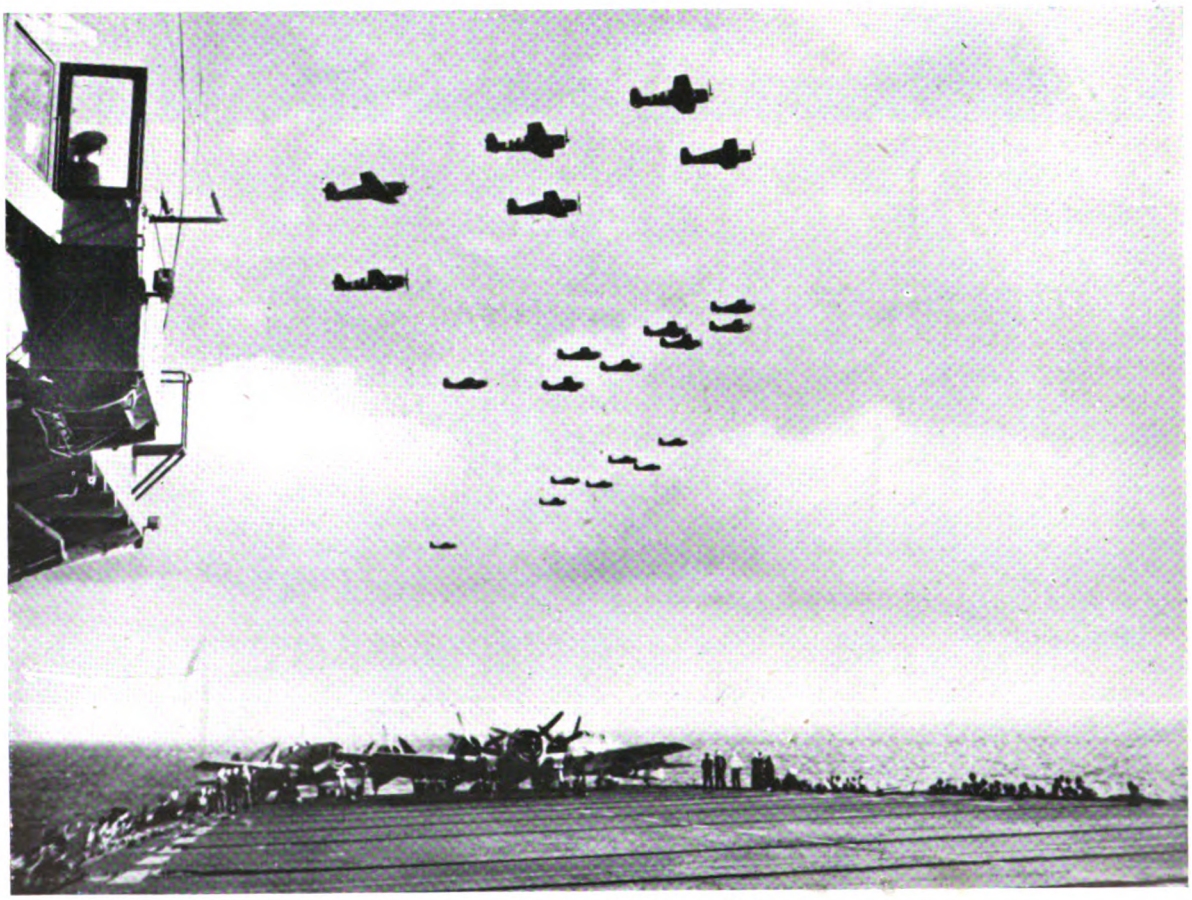
Before these plans for the landing on Okinawa could be put into effect, however, there was much that had to be done. Okinawa and the neighbouring small islands rise from a sub-ocean plateau which provides a considerable area around the islands where there are less than 100 fathoms of water. It was therefore necessary to provide for a considerable mine-sweeping effort, in addition to making provision for the destruction of underwater obstacles which the Japanese had placed off the beaches in much the same way as the Germans had done off the Normandy coast.

It was, moreover, considered that some sheltered anchorage must be obtained in the close vicinity of the landings for the shelter of the vast supply train which was considered to be necessary to succour both the ships and the troops. To provide for this it was decided that the small islands of the Keramo Retto group, some 20 miles to the south-west of the chosen assault beaches, should first be seized, and converted into an advanced temporary repair and supply base. A seaplane base was also to be set up in these islands.

The small island of Keise Shima, some ten miles from the landing beaches, was also to be seized. Although 20,000 yards from the landing beaches, this little island was only 11,000 yards from Naha, the capital of Okinawa, and army artillery was to be landed on Keise Shima which would be capable of commanding the whole of the south-west coast of Okinawa. It was also planned that the main assault on the beaches on the south-west of the island should be accompanied by a strong demonstration, and actual landing if necessary, on the south-east coast.

Naturally, the co-ordination of all these various facets of the plan presented considerable difficulties, particularly since ships had to be loaded on the United States coast, in the Hawaiian Islands, in the south-west Pacific, in the Marshalls, the Carolines, and the Philippines. Then they had to assemble



ON H.M. ESCORT-CARRIER *EMPEROR*

A view from the British escort-carrier of Hellcats and Martlets lined up in wing formation off on an operation. On the flight-deck more aircraft are ready to take off. Note the ship's bridge on the left.

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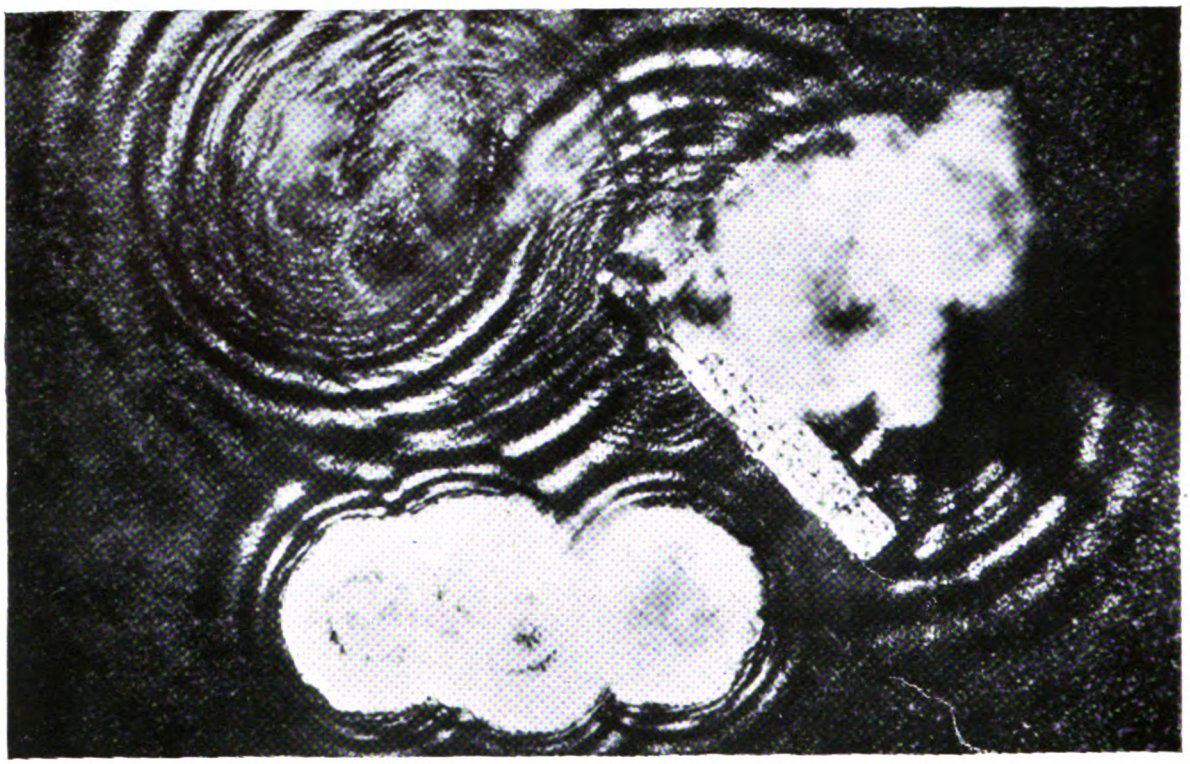

MESSENGERS OF DESTRUCTION FROM THE SKY

Bombs from Avenger planes operating with the British Pacific Fleet ring a trapped Japanese escort-carrier. A near miss is seen bursting alongside the carrier, which later received a direct hit.

at points as far apart and as far from their objective as the Philippines and the Solomons. The Joint Expeditionary Force itself consisted of more than 1,200 ships. There is no denying that the invasion of Okinawa, with the great forces required and the vast distances involved, represented one of the great feats of organisation of the war.

At Okinawa the day for the launching of the initial assault was called "L-day" instead of "D-day." "L-day" had been fixed for April 1st, but the operation began more than a week before that day. As early as March 24th the minesweepers arrived off Okinawa and began their patient task under cover of guns of battleships and of aircraft from the Fast Carrier Force. There were no less than 75 minesweepers engaged in this operation, and before "L-day" they had cleared the coastal waters right round the southern part of Okinawa Island and also carried out the necessary minesweeping for the capture of Keramo Retto and Keise Shima. A total of 177 mines were swept by these minesweepers during the pre-assault phase, and about 80 mines which had been cut from their moorings and had come to the surface were destroyed.

On March 26th the assualt on Keramo Retto was begun, and within the next few days the whole of these islands, and of Keise Shima, were cleared of the enemy. Artillery was landed on the latter island and the anchorages of the Keramo Retto group were rapidly converted into net-protected temporary repair and supply bases.

On the same day that the assault on the Keramo Retto islands was launched, Vice-Admiral H. B. Rawlings' British Task Force came into action against Japanese aircraft, airfields, and other installations in the Sakishima group of islands, about half way between Okinawa and Formosa. The attack apparently took the Japanese by surprise, for there was no opposition apart from anti-aircraft gunfire. Twenty Japanese aircraft were destroyed on the ground. One small coastal vessel was sunk and several others damaged, and the town of Ohama, which contained the Japanese headquarters, was left in flames. It was estimated that a further fourteen Japanese aircraft were damaged on the ground.

The actual score in enemy aircraft destroyed and damaged does not seem large having regard to the

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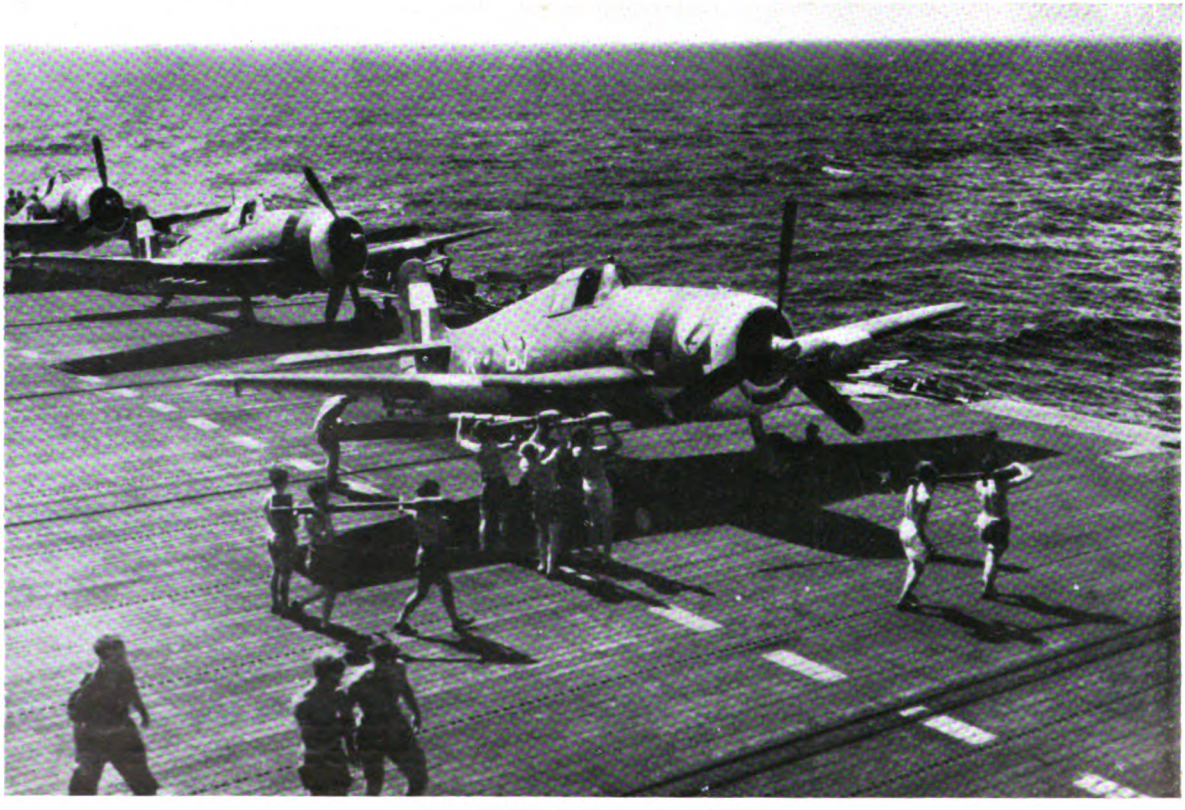
scale of the attack, but the importance of the attack went far beyond this. The British aircraft left the Japanese airfields on the Sakishima islands of Miyako and Ishigaki in a condition which made it impossible for aircraft to operate from them in any strength. Naturally, an airfield can be repaired, but this takes time, labour and materials. Not only were the Sakishima group of airfields put out of action during the assault on the Keramo Retto islands so that aircraft could not operate from them or be staged in from Formosa to act as reinforcements, but the progress of repairs on these airfields was carefully watched by air reconnaissance so that the attack should be repeated as soon as the Japanese had succeeded in almost completing the repairs.

At the same time Vice-Admiral Mitscher's powerful force of fast American aircraft-carriers were doing great work around and to the north of Okinawa, including the systematic and effective attrition of the Japanese air force in the southern of Japan's main islands. In this area targets were far more prolific and the Japanese had good cause to put every aircraft that could be spared into the air in the vain attempt to check the great offensive of the American naval aircraft.

Even allowing for these factors, however, the statistics of the success gained by the American carrier-borne aircraft seem almost staggering. During the period from March 18th to April 12th they accounted for 841 Japanese aircraft shot down by aircraft, 73 shot down by the anti-aircraft gunfire of the ships, and 363 destroyed on the ground. That is, a total of 1,314 Japanese aircraft destroyed in a little more than three weeks, for during that period the British aircraft-carriers had carried out a strike against the airfields of northern Formosa in which sixteen enemy aircraft had been destroyed in the air and one on the ground.

These figures—spectacular though they are—take no account of enemy aircraft damaged during the raids on the many Japanese airfields. Even without considering the inevitable damage to aircraft on the ground and to repair and replacement plants, the Japanese air force was being subjected to a scale of attrition comparable to that which Hitler's Luftwaffe found itself unable to face in 1940.



AMMUNITION FOR THE HELLCAT

A party of armourers loading a Hellcat naval fighter with rocket projectiles for use against the Japanese—a scene on board an escort-carrier operating with the East Indies Fleet.

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Specialty drawn

JAPANESE HOMELAND GETS A BATTERING

The combined Pacific Fleets of Britain and the United States bombard Tokyo and other parts of Honshu, the main island of the Japanese homeland. The attack, which was made without any real opposition by the enemy's air force or navy, followed terrific assaults by Allied carrier-borne aircraft in the Tokyo area, and marks what Admiral Nimitz has called the "pre-invasion stage" of the war. This was the first occasion on which British planes and warships had attacked Japan on the same day. Admiral Halsey, of the U.S. Navy, was in command of the operations, with Vice-Admiral Sir Bernard Rawlings in tactical command of the British

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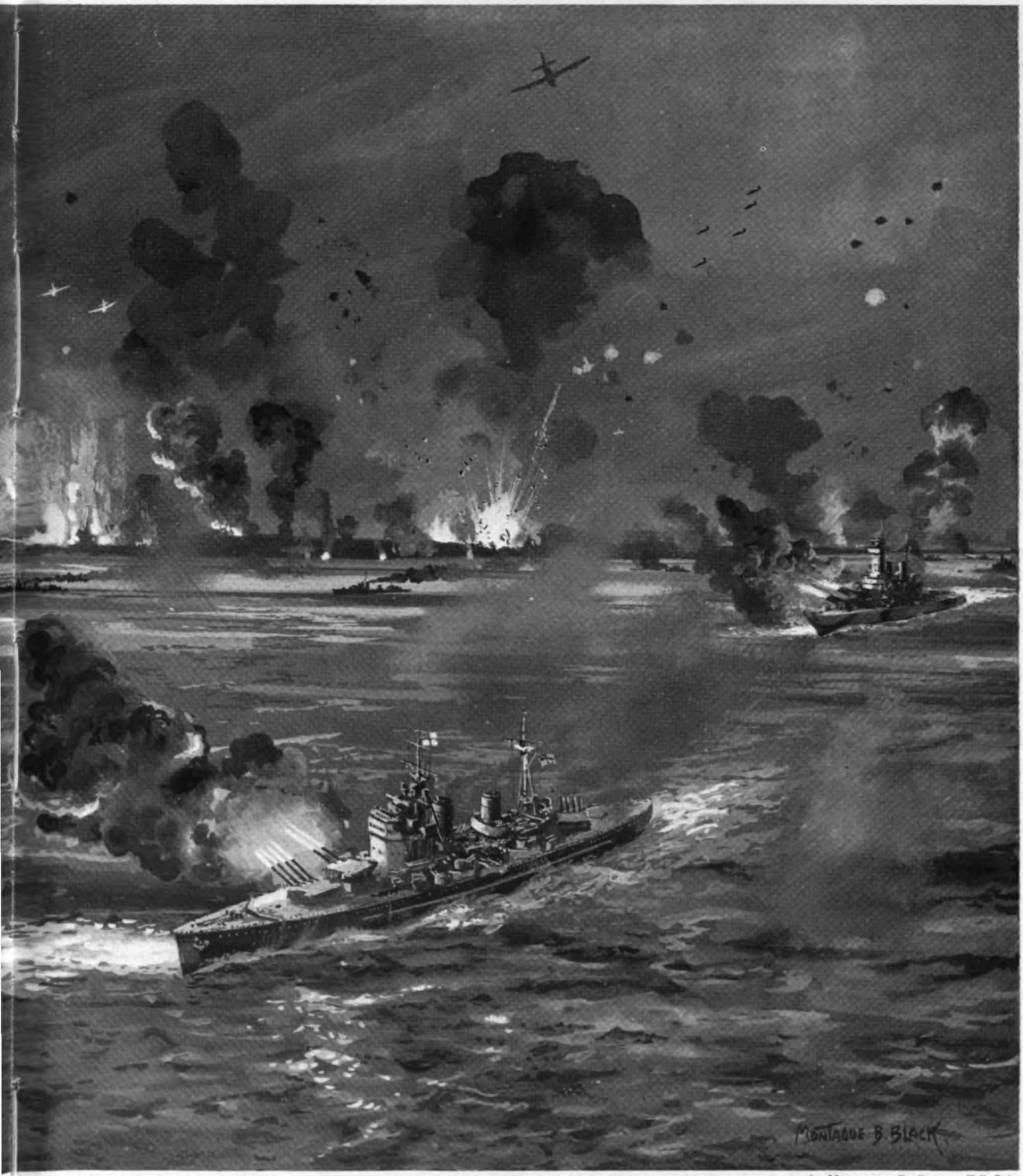

by MONTAGUE B. BLACK, F.R.S.A.

FROM COMBINED BRITISH AND AMERICAN FLEETS

force, which included the 35,000-ton battleship *King George V*, the cruisers *Black Prince* and *Newfoundland*, and the destroyers *Quickmatch*, *Barfleur*, *Grenville*, *Troubridge*, and *Undine*. Vice-Admiral Sir Philip Vian, Commander of the British carriers, in a message to his ships, said: "All our ships have waited for this day, when we are able to launch our air squadrons against Japan, whose rulers would, if they could, subject England and the Empire to a degree of misery and humiliation exceeding that planned for us by the Germans." In this drawing our special artist, Montague B. Black, F.R.S.A., gives an impression of the combined Allied operations.

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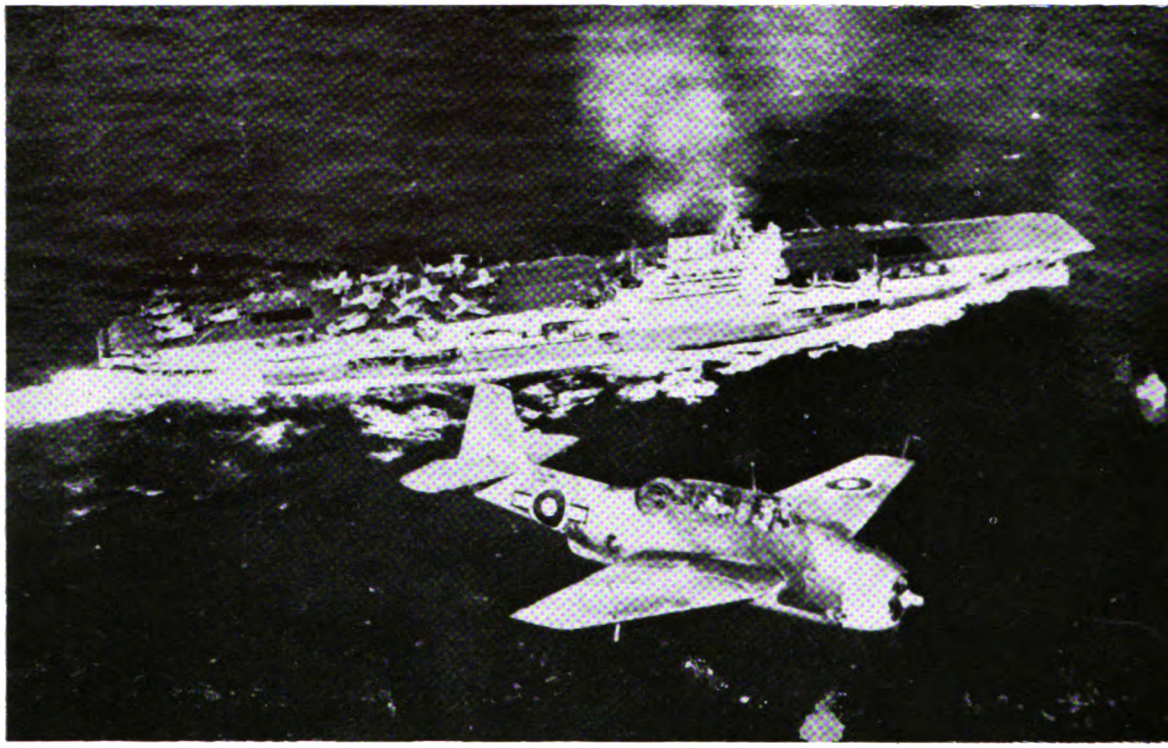

OVER A BRITISH AIRCRAFT-CARRIER IN THE PACIFIC

An Avenger of the British Pacific Fleet flies over H.M.S. *Indomitable* as it returns from operations against the Sakishima Islands in support of the American landing on Okinawa.

It would, however, be wrong to convey the impression that the Japanese air force was, even after the invasion of Okinawa had been in progress for more than ten days, nearing the stage of impotence. The Japanese had proved themselves to be fanatical fighters, and none of those in responsible command in the war considered the possibility of the Japanese air force collapsing while a single squadron remained to it. It was a very different proposition to the Luftwaffe in 1940. The latter had at that time been waging an aggressive war and the scale of losses had led this to be called off by the German High Command in favour of other operations. For the Japanese there could be no other operations. Every Japanese knew that Okinawa was merely the opening of the final operation, even though the main strength of their forces was concentrated in the Japanese home islands.

The initial assault on the island of Okinawa met with surprisingly weak resistance, and by noon on "L-day" the assault forces were in virtual possession of both the Yontan and Kadena airfields and were well on their way to cutting the island in two, most of the Japanese troops having withdrawn into the southern part of the island. In that sector, however, they used defensive tactics which were officially described as "artful and fantastic," and, although progress in the northern part of the island was fairly rapid, that in the southern sector was slow against bitter and determined resistance, so that from April 4th to May 26th—more than seven weeks—the American troops were able to advance only about four miles.

Even this slow progress had demanded a very high degree of effort from the naval bombarding ships, which did magnificent work in addition to the batteries which had been mounted on the small island of Keise Shima and the invaluable support given by the naval aircraft.

The Japanese naturally reacted strongly to the attack on Okinawa. Not only did they concentrate submarines in the vicinity in the hope of inflicting crippling loss or damage upon the invading and support convoys, but a concentration of "suicide" aircraft was employed as well as normal air attack.

The "suicide" aircraft, known as "Kamikaze," proved the most dangerous. This new form of air attack had first been experienced by the British East Indies Fleet in the Indian Ocean, but it had proved ineffective. There is no doubt that in the intervening months the Japanese had perfected the technique

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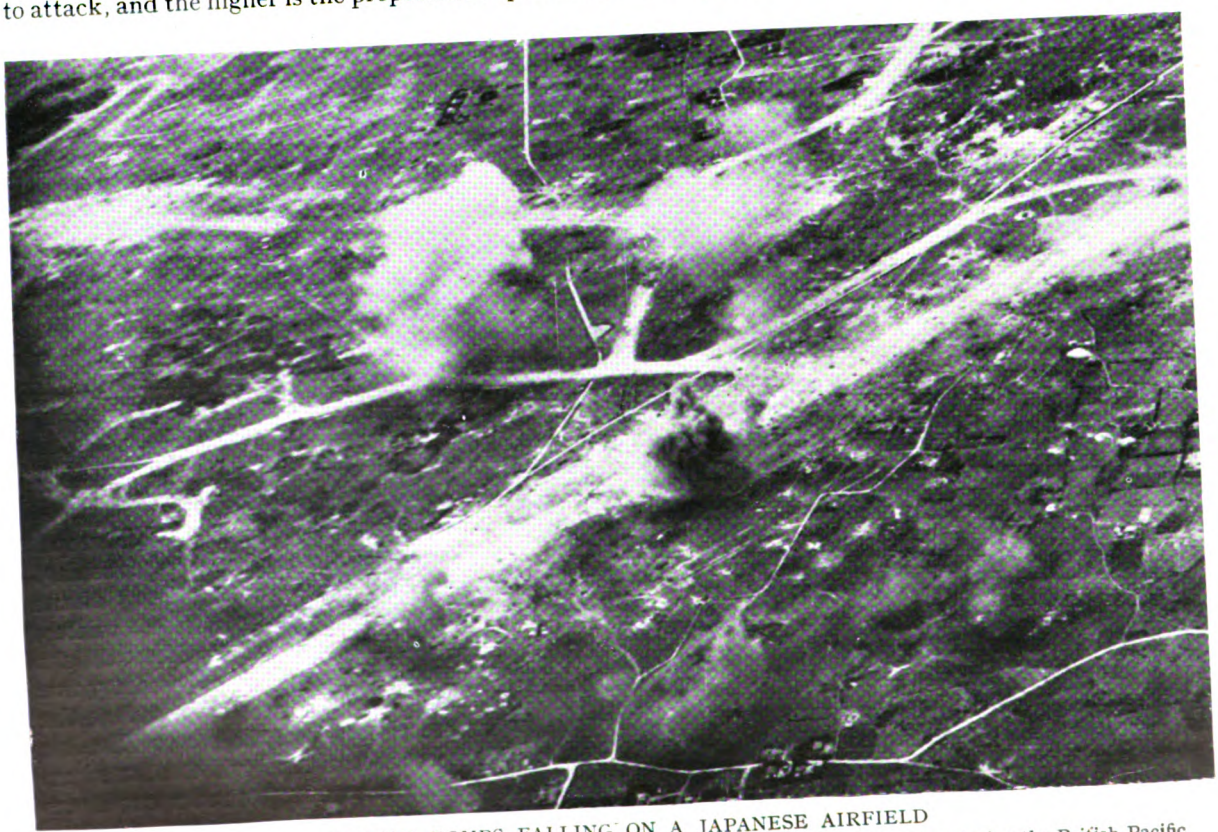
and trained even more determined pilots. The Kamikaze aircraft was a small machine rather like a fighter, but carrying a big explosive charge. The technique appeared to be for the pilot to dive on his objective and then turn the machine over just before it crashed. It was said that the families of the pilots of these aircraft received their obituary notices and a message of condolence and exhortation as soon as they went under training for this form of "suicide" warfare. Certainly, once a pilot was committed to an attack he was as good as dead.

It was this form of air attack which caused most of the naval casualties during the Okinawa operation. It was intensely dangerous because there could be no question of driving it off or forcing the aircraft to jettison its bomb load. Either the aircraft was shot down, or it completed its attack. Often, of course, avoiding action on the part of ships and errors of judgment on the part of the pilots led to Kamikaze aircraft crashing into the sea. Still more often short-range anti-aircraft fire accounted for them. Nevertheless, a considerable number got through and delivered their attacks with some success. So dangerous was this form of attack deemed to be that Admiral Spruance organised a system of patrol lines some distance from the main concentration of ships at Keramo Retto and off the Okinawa beaches.

This system of patrol lines was very similar to the patrol lines which were set up off the eastern side of the anchorages during the invasion of Normandy. The main difference was that, whereas in Normandy the patrol lines were to guard chiefly against such "secret" weapons as one-man torpedoes and explosive motor boats, those off Okinawa were to guard chiefly against the "secret" weapon of the Kamikaze. These patrol lines were also invaluable in giving early warning of attack.

Despite all possible precautions and the utmost vigilance, however, the casualties were high. Fleet Admiral Ernest King, in his report to the Secretary of the Navy, gave a terse résumé of the effects of Japanese air attack off Okinawa and the means used to combat it. He reported:

"The longer the Navy must remain in support of assault troop operations, the more vulnerable it is to attack, and the higher is the proportion of personnel and ship casualties. Slow progress on the ground



BRITISH BOMBS FALLING ON A JAPANESE AIRFIELD

Bombs from Avenger aircraft burst on the runway of a Sakishima airfield—another picture taken during the British Pacific Fleet's attack on the Sakishima Islands.

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FIREMEN RUSH TO CLEAR THE DECK

Firefighters busy on board one of H.M. carriers of the British Pacific Fleet after a Japanese suicide plane had crashed on the flight-deck—a picture taken during the operations off the Sakishima Islands.

is directly reflected, therefore, in naval losses. The first enemy air attack at Okinawa occurred on March 24th when the minesweepers arrived; the first damage was done on March 26th; and by June 21st, when organised resistance had ceased, about 250 vessels of all classes, from battleships and carriers down to destroyers and landing ships, had been hit by air attack, by far the greatest proportion of them in suicide crashes. Some 34 destroyers or smaller craft were sunk. Early warning of impending attacks proved to be the best counter-measure and for this purpose destroyers and other small vessels were stationed as pickets at appropriate distances from the concentrations of heavier shipping. These pickets took the heaviest losses themselves, but in so doing they undoubtedly saved many bigger and more valuable vessels during a critical three months."

One of the many ships which thus sacrificed themselves on the picket line was the minesweeper U.S.S. *Emmons*. It was about 3.15 one afternoon when enemy aircraft were reported approaching. There were only two of them to begin with, and both of them attacked a ship in the vicinity of the *Emmons*. One hit by means of a "suicide" crash, and the other missed in carrying out an ordinary bombing attack. As the U.S.S. *Emmons* prepared to go alongside the other vessel to save life and fight fires more and more Japanese aircraft were reported, until there were between fifty and seventy-five of them in the area. Many were brought down by the American fighters, but it was clear that the Japanese pilots sought to avoid combat in an attempt to get in their attacks on the ships. The air was thick with the bursts of anti-aircraft fire, among which the Japanese attackers and the American fighter aircraft weaved in a succession of confused "dog-fights." This went on for just over two hours before the U.S.S. *Emmons* was hit. Then, at 5.22 p.m., she was hit five times in quick succession. The first hit was aft; then there were three hits on the starboard side and one on the port side. The whole of the after part of the hull disappeared; the whole of the bridge structure was destroyed; fire raged

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from aft as far forward as Number One gun; little or nothing remained of the decks above the main deck in the section of the ship beneath the bridge super-structure; small-calibre ready-use ammunition was exploding in all directions. In these circumstances it is hardly surprising that the senior surviving officer ordered the ship to be abandoned, and she afterwards had to be sunk by the American forces.

The split-second nature of this form of warfare is well described in the following words by one of the crew of the U.S.S. *Emmons*, speaking of a later attack, which developed while the crew of the *Emmons* were trying to transfer their wounded to another ship. He said: "None of us would have gotten off if it hadn't been for the miraculous shooting of a Combat Air Patrol pilot. About dusk, while our crippled ship was little more than a sitting duck, a Jap Kamikaze came in for the kill. We spotted him at about 2,500 yards. One of our fighters attacked at 500 yards, and at 200 yards scored a direct hit and the Jap plane exploded and splashed. If it had not been for a direct hit on the gas tank or bomb the momentum of the suicide plane would have carried it right into us."

The destroyer U.S.S. *Mannert L. Abele* was another ship which was lost on the picket line north of the Okinawa beachhead. She was one of five American destroyers, the loss of which was announced by the Navy Department on April 20th. The loss of this ship was due to a combination of the Japanese suicide aircraft and a jet-propelled Baka flying-bomb.

The suicide plane dived through a blazing cone of anti-aircraft fire from 5-inch, 40-millimetre and 20-millimetre guns to hit the ship on the starboard side, penetrating to the after engine room before the delayed-action bomb exploded. About a minute later the Baka jet-propelled flying bomb came skimming over the water at more than 400 miles an hour and hit the ship at the waterline under the foremost funnel. This flying bomb was described by eye-witnesses as a low mid-wing monoplane with about 15 feet wing span, with twin vertical fins and rudders, and was apparently pilotless.

These two hits caused the American destroyer to break in two. Her casualties were heavy. There were 81 dead and 32 wounded, many men being trapped in compartments and carried down with the

AFTER THE CRASH OF A JAPANESE SUICIDE PLANE

Attacks by Japanese suicide aircraft were a feature of the naval operations off the Sakishima Islands in support of the Okinawa landings. But not one of our ships was put out of action for more than two hours, largely owing to the splendid work of fire-fighters such as those seen here at work after a plane had crash-landed on a British aircraft-carrier.

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ESCORT-CARRIER AIRCRAFT PREPARES TO LAND

When this Hellcat aircraft was about to land on an escort-carrier the batsman signalled the pilot to "Go round again" as his approach was too high. The arrester hook of the aircraft can be seen trailing aft.

halves of the ship when she sank. The casualty list was further increased by a Japanese aircraft which dropped a bomb among survivors on a life raft after the remains of the ship had been abandoned.

As an illustration of the desperate nature of the fighting on the picket lines just to the north of the landing beaches and shipping concentrations on Okinawa it would be hard to beat the epic fights of the destroyers U.S.S. *Newcomb* and U.S.S. *Leutze*, both ships being saved by determined fighting and skilful damage control and fire-fighting.

At 4 p.m. on April 6th a very large formation of Japanese aircraft was reported to be approaching from the north. A few moments later it was reported that these Japanese aircraft were being hotly engaged by American fighter aircraft, but although the main groups were being intercepted, enemy aircraft were slipping through during the resulting "dogfights." As the fighting drew nearer an officer of the U.S.S. *Newcomb* was able to count at least 40 Japanese aircraft in the air, and more than 20 wrecked enemy aircraft in the water.

The first Japanese aircraft to break away from its formation began to dive on the *Newcomb* at 4.25 p.m. It was met with accurate and concentrated anti-aircraft fire, which set it on fire, and it crashed into the sea about 20 feet from the starboard side of the destroyer.

Almost immediately another suicide aircraft came in to attack. As it dived it was hotly engaged by gunfire; and then at the last moment Commander McMillian, U.S.N., the commanding officer of the *Newcomb*, put the helm hard over. The Japanese aircraft crashed into the destroyer's wake, sending up a huge splash close astern of the ship.

The third aircraft to attack came in low. Despite a hail of fire which was so intense that the gunners momentarily lost their target, it came on and, after ricochetting off a gun-mounting, crashed into the after funnel of the destroyer. Petrol, steam, flying metal and high explosive made a burning inferno of the midship section of the destroyer, and then yet another attack developed, the Japanese pilot

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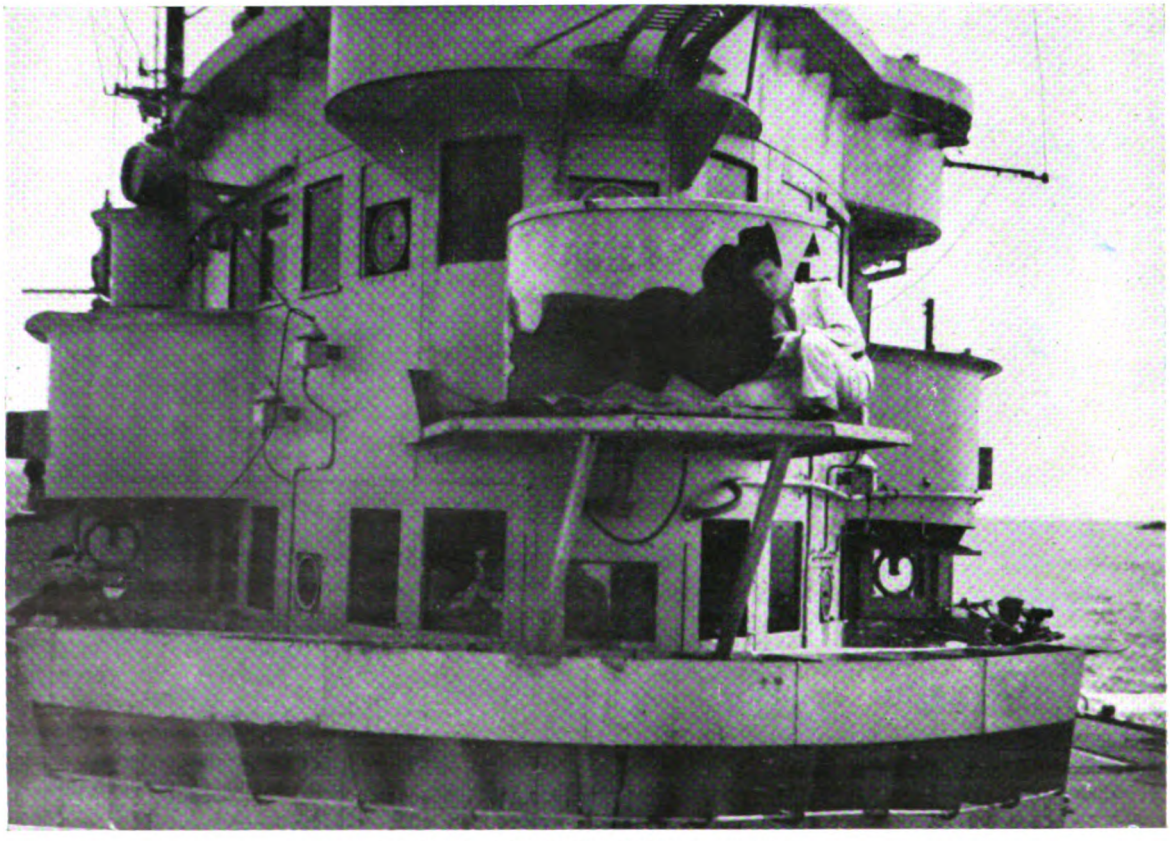
apparently thinking that he had an easy kill in the wounded ship. Despite the damage to the ship and the fact that many men had been flung overboard the *Newcomb's* fire was accurate and effective. One wing was shot off the Japanese aircraft, which crashed into the sea several hundred yards away on the starboard bow.

Then two Japanese aircraft delivered simultaneous attacks. One of these made a successful suicide crash amidships. The after funnel, torpedo tubes, 40-millimetre gun-mountings, and the whole of the midship super-structure was blown overboard. Smoke and flames rose several hundred feet into the air and the *Newcomb* came to a standstill. At that moment the other of this pair of Kamikaze aircraft came in on the port beam. He was hit, but he came on and crashed into the foremost funnel, adding more high explosive and petrol to the raging fires.

Lieutenant Grabowsky, commanding the destroyer *Leutze*, however, had acted quickly, and his ship was by that time almost alongside the crippled *Newcomb*. As the ships grated together fire-fighters and first-aid men began to work like demons. And then yet another Kamikaze came in to attack, the pilot trying to crash both ships at once. The aircraft was hit as he headed for the *Newcomb's* bridge. It tilted and swerved, lost height, and skidded across the *Newcomb's* deck to hit the stern of the *Leutze*, where it did much damage and started big fires. The two destroyers began to drift apart. Then another destroyer came to help the *Newcomb*, and within 30 minutes her fires were under control. In less than an hour the *Newcomb* was in tow on her way to an advanced repair base. Meanwhile the *Leutze* was struggling to keep afloat. At one time her quarterdeck was two feet under water. Nevertheless, she too was saved.

Meanwhile the struggle for possession of Okinawa raged on shore, where the Japanese adopted tactics as suicidal and as fanatical as those at sea and in the air. It was a long and bitter struggle despite



AFTER A JAPANESE SUICIDE ATTACK

Inspecting damage to the ship's bridge after a Japanese suicide attack—a picture taken on board H.M.S. *Illustrious* during the British naval action against the Sakashimas. The carrier was attacked by a suicide plane which scraped the bridge with its wing and then crashed into the sea.

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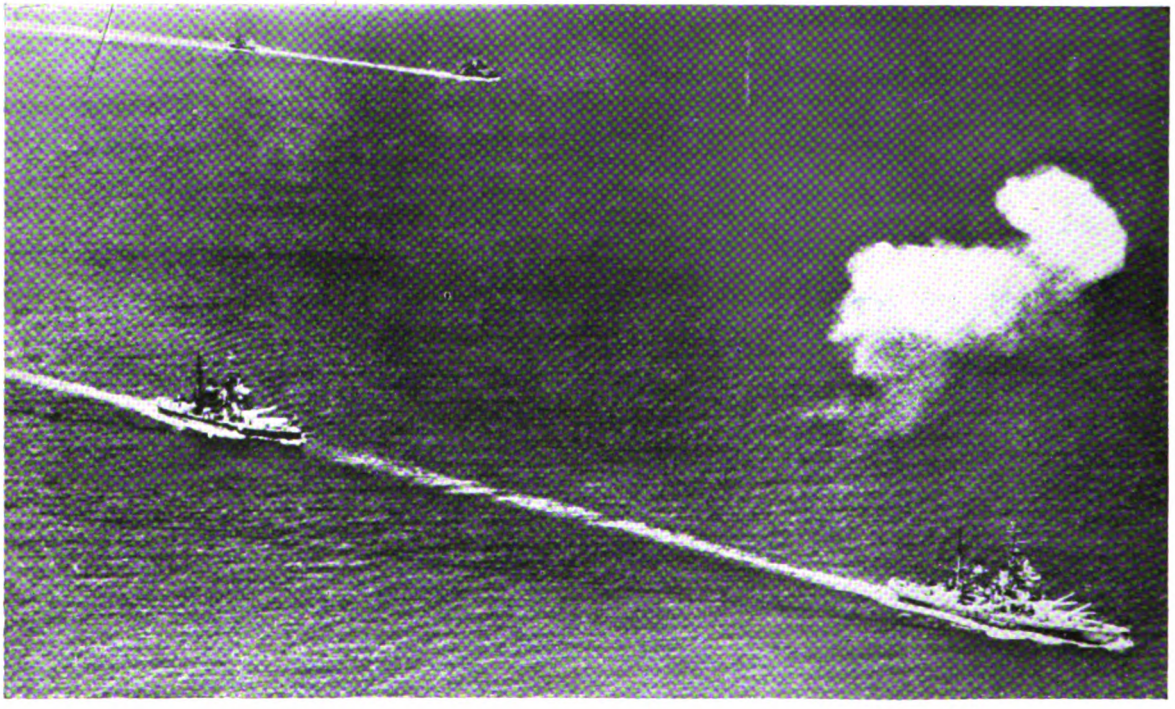
the weight of the air and naval support which was given to the troops—47,000 tons of naval ammunition was fired in the first 75 days of that 82-day campaign—it was not until June 21st that organised resistance ceased on the island. That midsummer's day marked the beginning of the last phase of the Empire of the Rising Sun.

CHAPTER XVII

MENTION has been made in the last chapter of some of the widespread operations which were undertaken by both the British and American naval forces in order to "cover" the invasion of Okinawa. In many ways these went far beyond the initial intention of merely giving "cover" to a great amphibious operation carried out at very great distances from the nearest available main base. In fact, these so-called "covering" operations played a major part in the future progress of the war in the Far East.



JAPANESE ISLAND BOMBARDED

Warships of the British Pacific Fleet which formed part of a task force assigned to bombard Japanese military targets on the island of Miyako, one of the Sakashima group.

Nor was the effect of these operations confined to the attrition of the Japanese air forces. This was, of course, a most important factor. On April 6th, for instance, no fewer than 248 Japanese aircraft were destroyed by the United States carrier-borne aircraft for the loss of two American aircraft. It should be borne in mind, however, that this was the result of a defensive battle in the neighbourhood of the invasion beaches and anchorages, and that the figures of enemy aircraft lost are inevitably inflated by the number of suicide aircraft employed by the Japanese. For that reason the totals of Japanese aircraft destroyed in this and similar actions cannot be compared with any accuracy with the number of German aircraft shot down during the Battle of Britain. In one case the enemy had every reason to conserve both pilots and aircraft; in the other the enemy was using pilots and aircraft as projectiles.

The invasion of Okinawa had been in progress barely a week before Vice-Admiral Mitscher's force of fast aircraft-carriers scored a major success against some of the remaining units of the Japanese fleet.

It was on April 7th that searching aircraft ranging far ahead of this aircraft-carrier force—which was then carrying out an extensive sweep to the northward of Okinawa—located a powerful Japanese

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SUICIDE ATTACKS ON BRITISH CARRIERS

During two months of operations by the British Pacific Fleet against the Sakashima Islands, the carriers bore the brunt of the attacks by the Japanese suicide pilots. More than 140 Japanese aircraft were destroyed, and although five of the pilots succeeded in crash-landing their planes on the decks of our aircraft-carriers only minor damage was caused. The top photograph shows Japanese planes crashing in smoke into the sea during a heavy attack. The lower picture shows smoke pouring from an aircraft-carrier which sustained a hit but was in full operational control within a few hours.

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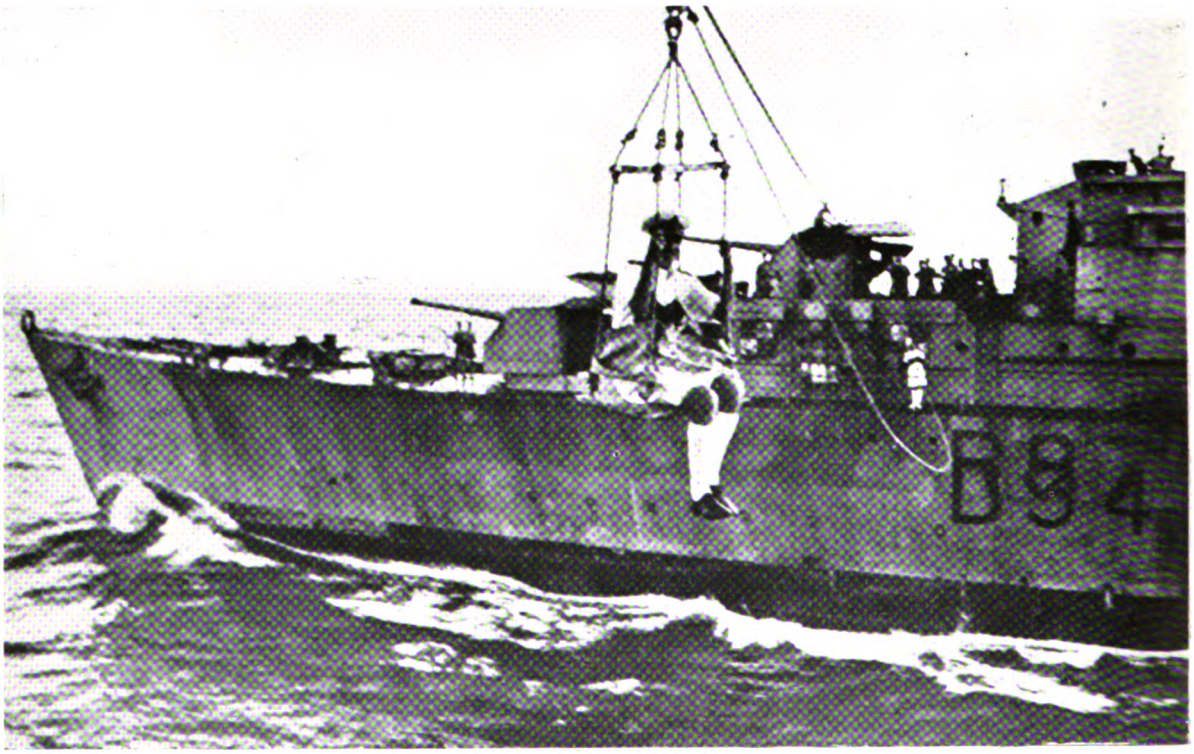
naval force in the East China Sea. This force was steering south and was not far from the coast of Kyushu, so that it seems probable that it had come from Nagasaki and had some part in a Japanese forlorn hope to raise the seige and invasion of Okinawa. If so, it argues that the Japanese were fully aware of the fact that the loss of Okinawa would be a fatal blow which would carry the war in great strength to the Japanese home islands.

The weather in the East China Sea on that day was bad, with low cloud and visibility. In fact, it was weather that favoured surface ships rather than aircraft. Nevertheless, the American airmen not only found the Japanese naval force, but shadowed it successfully until it was attacked by strong striking forces of aircraft. These attacks met with great success. They resulted in the sinking of the battleship *Yamato*, the cruiser *Yahagi*, and four destroyers, while two other destroyers were set on fire. Of the whole of that Japanese force the only ships to escape undamaged were three destroyers.



WHEN THE ADMIRAL MAKES A CALL AT SEA

Rear-Admiral E. J. P. Brind, commanding a Cruiser Squadron of the British Pacific Fleet, is transferred from one ship to another in mid-ocean—a safe but not exactly luxurious means of transport.

The Japanese, however, hit back with aircraft at the American aircraft-carrier force, and although the enemy lost eighteen aircraft one Japanese suicide bomber succeeded in dropping a bomb on the aircraft-carrier *Hancock* and then in itself crashing on the flight deck of the same carrier. The U.S.S. *Hancock* was badly damaged and there were 28 fatal casualties.

Nine days later another of the American aircraft-carriers—the U.S.S. *Intrepid*—was seriously damaged by a Kamikaze suicide aircraft which crashed on her flight deck. Then, in May, two more American aircraft-carriers were badly damaged by the same form of attack. These were the U.S.S. *Bunker Hill* and the U.S.S. *Enterprise*. It was a heavy toll of ships heavily damaged and in casualties to personnel, but it must be regarded as part of the price for the great victory of Okinawa.

Meanwhile the big British aircraft-carriers continued their operations off Formosa and the Sakishima group of islands. This they did against violent Japanese opposition, particularly by suicide aircraft. In these attacks both H.M.S. *Illustrious*—which was wearing the flag of Rear-Admiral Sir Philip Vian—and H.M.S. *Formidable* were hit more than once by Kamikaze suicide bombers. Yet neither ship was

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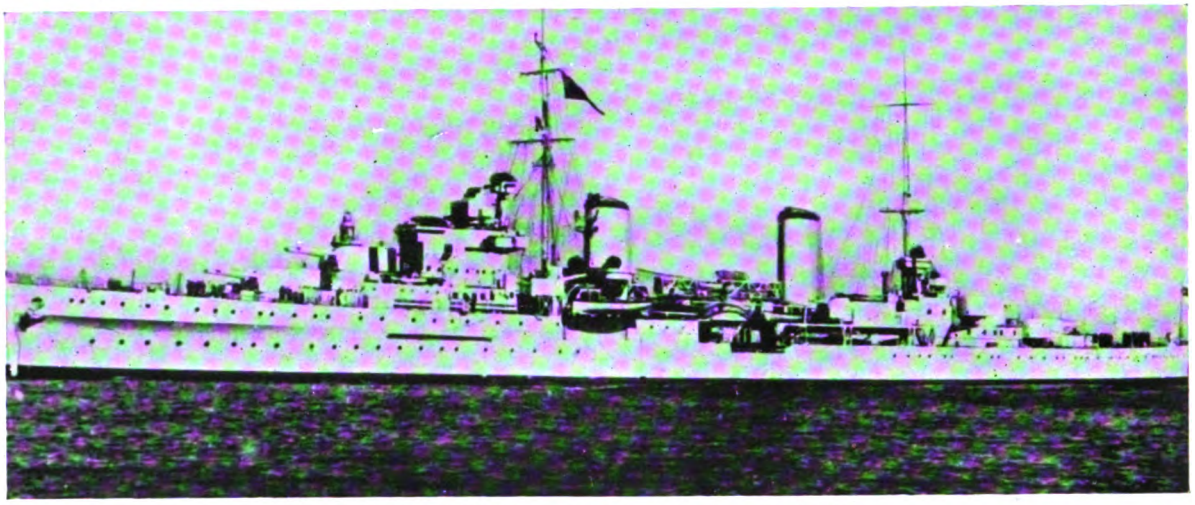
H.M.A.S. *SHROPSHIRE*—LONDON CLASS CRUISER

The cruiser *Shropshire*, completed in September, 1929, was officially transferred to the Royal Australian Navy on July 25th, 1943, to replace the *Canberra*, lost in action. Her armament consists of eight 8-in. guns, eight 4-in. ack-ack guns, four 3-pounder and fourteen smaller guns, with eight 21-in. quadrupled torpedo tubes and one aircraft with catapult.



H.M.A.S. *HOBART*—LEANDER TYPE CRUISER

This ship, formerly the *Apollo*, was acquired from the Royal Navy in 1938. The *Hobart* has a displacement of 7,105 tons. She carries eight 6-in. guns, eight 4-in. ack-ack guns, four 3-pounder, and ten smaller guns, with eight 21-in. quadrupled torpedo tubes.

H.M.A.S. *ARUNTA*—TRIBAL CLASS DESTROYER

The first Tribal Class destroyer built in Australia, the *Arunta* has a displacement of 1,870 tons. Her armament consists of six 4.7-in. guns, two 4-in. ack-ack guns, seven smaller guns, and four 21-in. torpedo tubes. All three took part in the bombardment which preceded the landings at Balikpapan.

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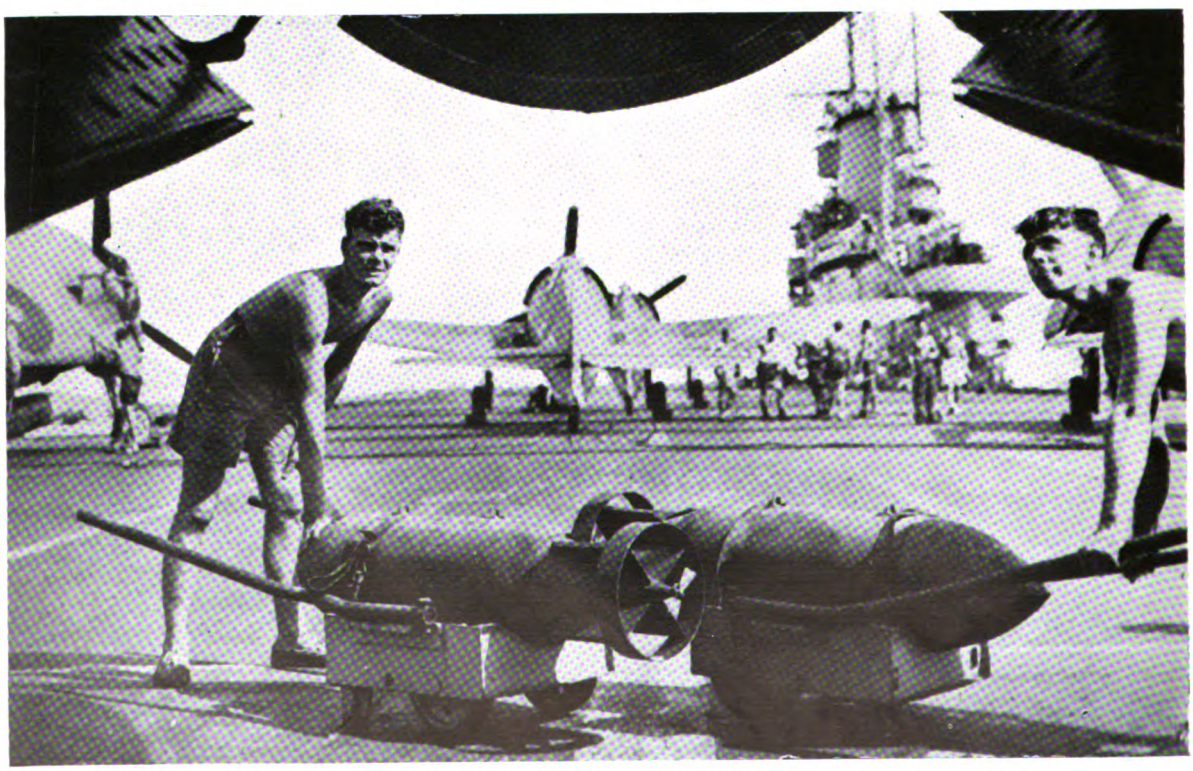
badly damaged, and neither ship was out of action for more than about half an hour—the time taken to clear the flight deck of the burning wreckage of the Japanese aircraft.

The fact that the British aircraft-carriers stood up so well to this sort of attack without suffering serious damage, while their American counterparts usually suffered heavily, was due to the fact that the big British aircraft-carriers were provided with armoured flight decks, so that the Japanese suicide aircraft failed to penetrate and explode within the vessels. The American aircraft-carriers had unarmoured flight decks—a fact which saved weight and therefore allowed of a greater number of aircraft being carried in a given size of ship. Naturally, this fact had to be kept a close secret at the time, for had the Japanese been aware of it they would surely have concentrated their Kamikaze attacks on the American aircraft-carriers in preference to those of the Royal Navy.

During the whole of the Okinawa operations—a period of close on three months—both the American and the British Task Forces kept the sea in close proximity to enemy-held coasts, and with their crews almost continuously at action stations. Here was, in a way, a reversion to the conditions of the long blockades and voyages of the days of sail, although the ships being used were the ultra-modern aircraft-carriers, battleships, cruisers, and destroyers. The coming of the steam age had made it necessary for fleets to have efficient bases for repair and supply in the vicinity of their operations, and had enormously reduced the length of time for which the fleet could remain at sea.

Here, in the later stages of the war in the Pacific, the process was being reversed. It was a development which radically alters the whole of the strategical conception of sea warfare.

This development arose from the conception and growth of what we called the Fleet Train and what the Americans called the Logistic Supply Group. The American problem was the greater because of the larger American forces operating, but the problem was eased for them by the rapid construction of naval supply depots and repair bases in the various Pacific islands as they were captured. These bases stretched all the way up from Manus, in the Admiralty Islands, through Guam, to Okinawa, where a great base was in course of construction when the war came to an end. The magnitude of the advanced-base programme of the American navy in the Pacific is indicated by the fact that the personnel assigned



ON THE FLIGHT-DECK OF A BRITISH CARRIER

Armourer ratings at work on the flight-deck of the aircraft-carrier H.M.S. *Indomitable*, bombing-up Avengers with 500-pound bombs during operations by a British naval force striking at occupied Sumatra

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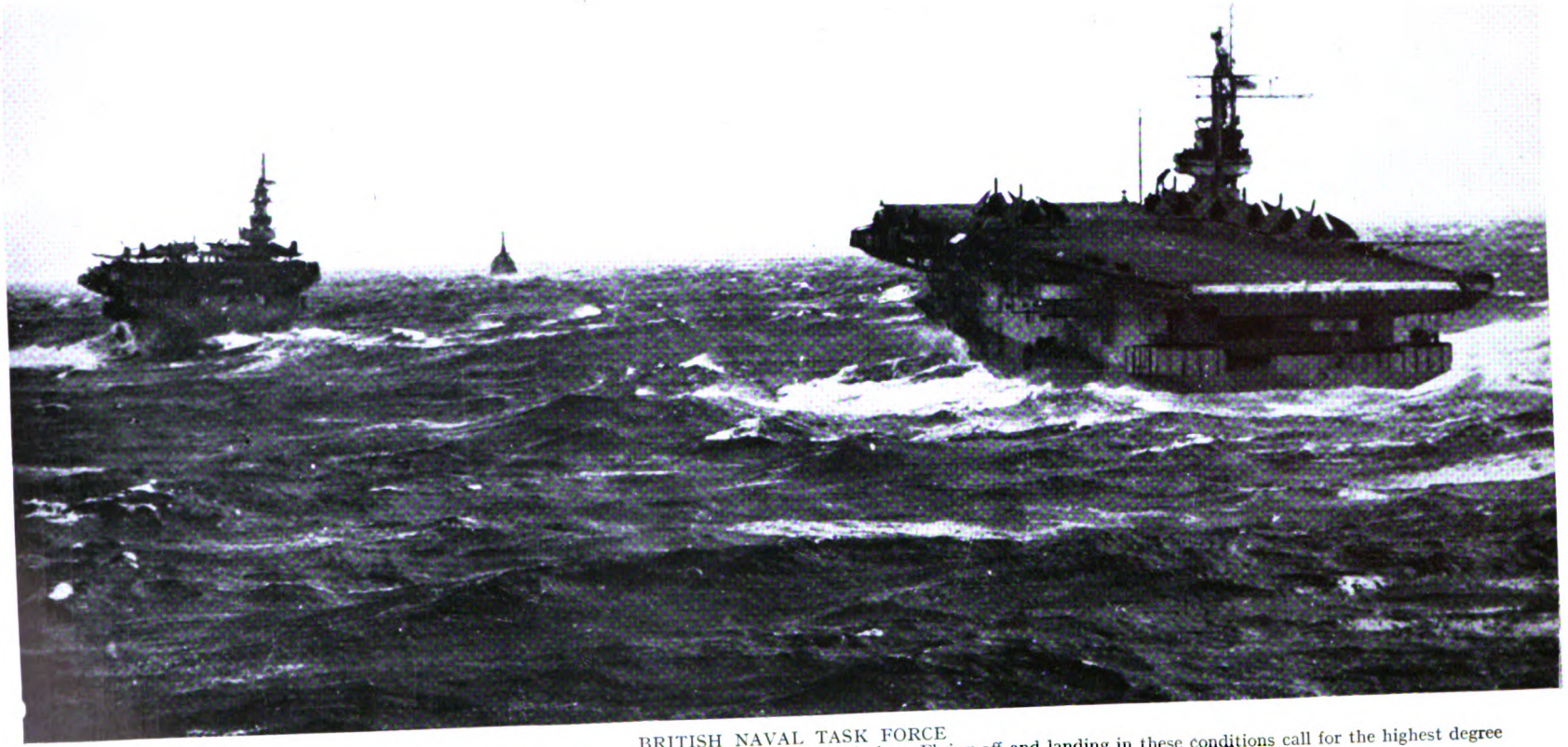

BRITISH NAVAL TASK FORCE

Two escort-carriers taking a tossing in the Pacific with their aircraft ranged on the flight-decks. Flying off and landing in these conditions call for the highest degree of flying ability.

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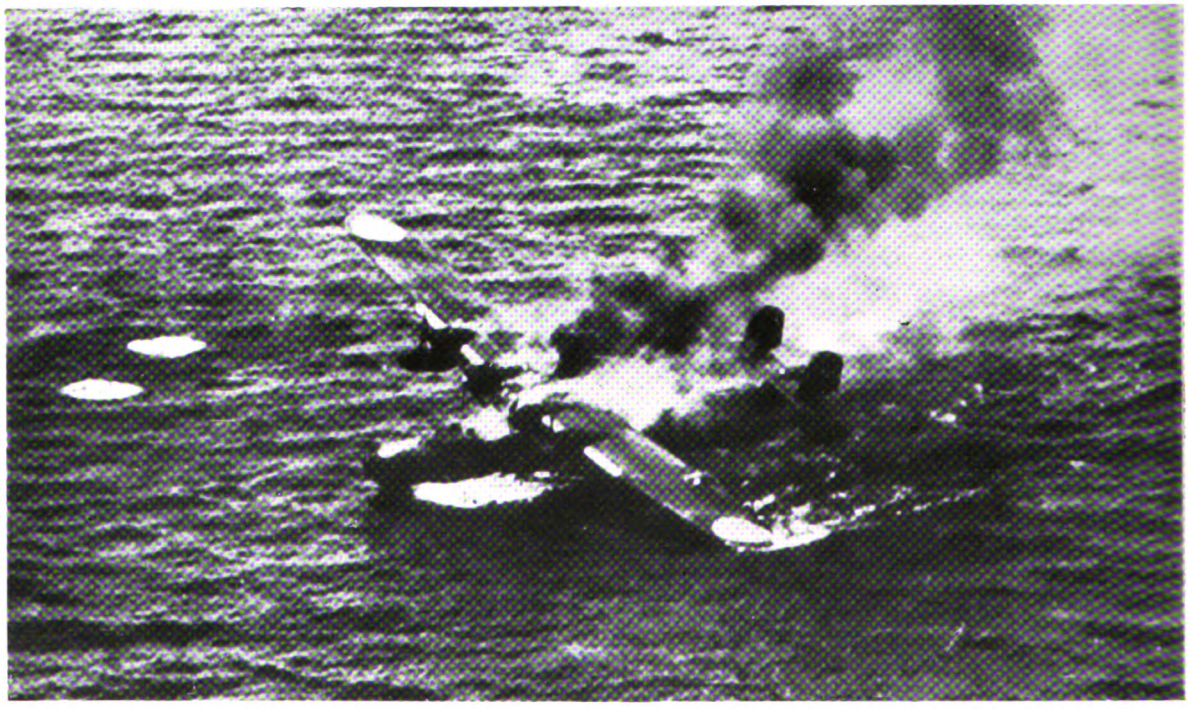
directly to it aggregated almost one-fifth of the entire personnel of the American Navy. The advanced bases called for the work of over half a million men, including more than 200,000 "Seabees"—the American Naval Construction Batallions.

The British problem was more one of ships than of island bases. The main base of the British Pacific Fleet was at Sydney, and Sydney is nearly 4,000 miles from the Sakishima group of islands and considerably more than 4,000 miles from the area in which the British Pacific Fleet was working during the final stages of the war.

The Fleet Train is, in effect, a completely mobile naval base which is capable of meeting the operational fleet at any prearranged rendezvous close to the operational area. Moreover, the ships of the Fleet Train must be capable of supplying all the needs of the operational fleet. This does not only mean fuel, provisions, ammunition, and the rest, but also the ability to deal with the unpredictable factor of damage caused to units of the operational fleet. It must also cater for the needs of large numbers of



A JAPANESE BOMBER MEETS ITS DOOM

Photograph received by wireless of a Japanese bomber burning on the ocean after it had been forced down off the west coast of Kyushu by U.S. Navy Coronado bombers. The enemy plane was trying to flee back to its home base when attacked.

men and be capable of handling big drafts of personnel as well as the replacement of battle casualties. In short, the Fleet Train has to be a floating industrial seaport and dockyard, capable of moving thousands of miles under its own steam and being able to remain at sea for long periods by the utilisation of its own resources.

The British Fleet Train in the Pacific, which was under the command of Rear-Admiral D. B. Fisher, consisted of well over 100 ships sailing under the White, Blue and Red Ensigns. Among these ships were vessels of no less than thirty specialised types.

Among the most important of these specialised ships were the big Fleet repair ships, which were adapted from Cunard White Star ships *Antonia* and *Alaunia* and similar vessels. These ships, in their new role, were gigantic floating workshops which were capable of carrying out battle repairs to even the largest types of warship.

The extensive nature of the machinery and other repair facilities installed in these ships is shown by the fact that it took up practically all the space which had been the accommodation of the ships as liners. Moreover, each of these floating dockyards required the labour of at least 700 skilled workers.

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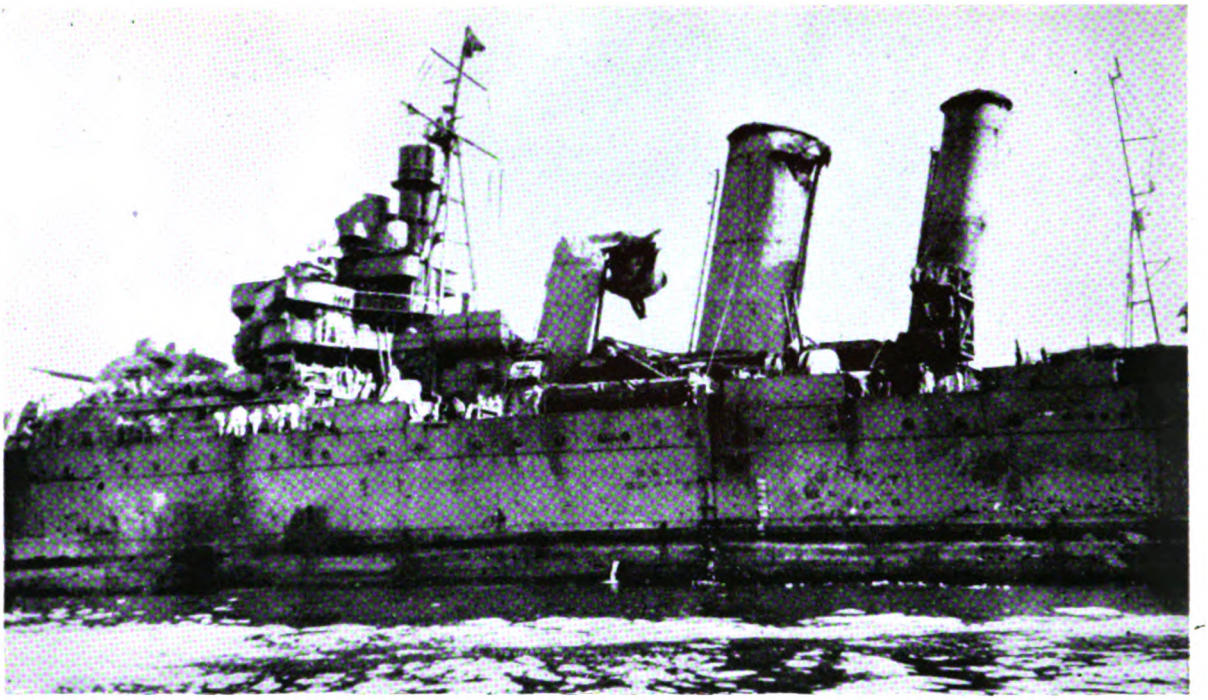

DAMAGE BY JAPANESE SUICIDE PLANES

The cruiser *Australia*, of the Royal Australian Navy, was hit by several Japanese suicide planes during an Allied landing operation in the Philippines. One actually hit one of her funnels and others crashed on her deck, but she kept her guns going in support of the landing and managed to get to New York for temporary repairs before going to a British port for overhaul. The top picture shows some of the damage inflicted on the *Australia*, and the lower picture shows some of her crew with fragments of one of the suicide planes.

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Specially drawn

ALLIED AIRCRAFT ATTACK THE

Admiral Halsey, Commander-in-Chief of the United States Third Fleet, broadcasting from his flagship, said: "What is left of the Japanese Navy is helpless, but we are hunting them out of their holes. The Allied scheme is working with smooth and devastating precision, and if the Japanese do not know they are a doomed nation they are even stupider than I think they are." That is the studied opinion of a man in a position to know; and even as he was speaking, over 1,000 carrier aircraft were striking at Japan's largest

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by MONTAGUE B. BLACK, F.R.S.A.

JAPANESE FLEET IN ITS HIDE-OUT

naval base, the Kure area in the south-west of Honshu, chief island of the Japanese homeland. The attack by allied planes began at dawn on July 24th, 1945, and continued throughout the day. A communique issued by Admiral Nimitz stated that during the onslaught U.S. and British planes damaged 20 Japanese warships as well as destroying or damaging 170 enemy planes. An escort-carrier and several warships were left burning, as shown in this impression of the scene by our artist, Montague B. Black, F.R.S.A

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But the machinery which had been installed in the ships to make them efficient Fleet repair ships took up so much room that no more than 200 men could be accommodated. Thus it became necessary for the remainder of the floating dockyard labour—they were called Special Repair Ratings (Dockyard)—to be accommodated in another ship, and thus another type of ship had to be found for the Fleet Train.

Victualling and store ships had also to be found and specially fitted out for their new duties. These were of two sorts. There were the bulk carriers, which normally took the stores and victuals in bulk to a Pacific base. There the bulk stores were split up and the special issuing ships were stocked with comparatively small quantities of every sort of requirement which the fighting ships might need. It was a stupendous feat of organisation, in which not a single nut or bolt or piece of canvas could be forgotten, for replacement could only be effected at the end of a journey of 4,000 miles each way.

As regards provisions, the capacity of the Fleet Train victualling ships was worked out on the basis that they must be able to carry and issue to the fighting ships anything up to 30,000 men/months of balanced diet. To accomplish this it was, of course, necessary to provide ships capable of carrying with safety and efficiency dry provisions, "wet" provisions, and fresh provisions requiring refrigerated spaces for their storage.

A certain amount of publicity was given at the time to the provision of so-called "Amenity Ships" for the Fleet Train. These carried canteens, cinema theatres, and even self-contained breweries. These ships, however, did not form part of the Fleet Train which met and supplied the fighting fleet at sea close to the operational areas. Rather were they part of the Mobile Naval Base Organisation which was capable by its mere presence of converting a desolate anchorage into an efficient temporary base. In this organisation, too, there were countless lighters, tugs, and various forms of harbour craft.

The Fleet Train proper, however, was capable, by means of accommodation ships, of handling drafts of up to 1,000 men to and from the fighting fleet.

Oil tankers were, of course, among the most important ships in the Fleet Train. These ships refuelled the ships of the fighting fleet at sea, and while all the ships concerned were steaming at ten to twelve

SUPPLIES FOR THE ENEMY'S DEFEAT

The order and organisation that helped to overcome the Japanese—the harbour of Guam, base of naval operations in the Pacific, with warships moored in the estuary and storage huts and barracks along the shore.

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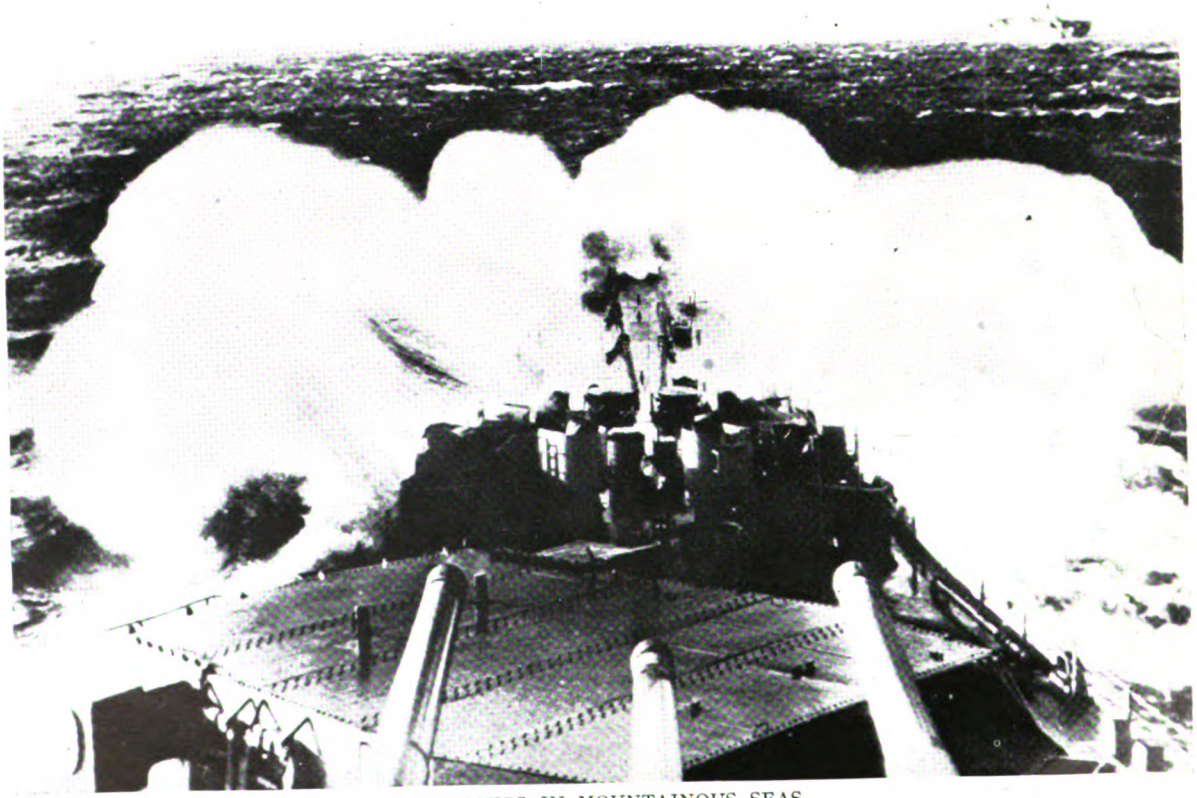

WARSHIPS IN MOUNTAINOUS SEAS

There were enemies in the Pacific other than the Japanese, and our ships operating in the ocean's western reaches often got a battering from mountainous waves. In these two pictures American ships are seen battling with heavy seas during rough weather. The top picture shows a destroyer, apparently half submerged, but merely caught in the trough of a high sea. The lower picture shows the 45,000-ton battleship *Missouri* smashing its way through a heavy swell.

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knots. This was found to be possible even in the long Pacific swell and in a fairly rough sea. The technique of fuelling ships at sea progressed rapidly, and the oil tankers of the Fleet Train were capable of fuelling simultaneously a battleship on one beam, an aircraft-carrier on the other beam, and a cruiser astern.

The transfer at sea in moderate weather of heavy weights such as torpedoes, heavy ammunition, and spare parts would at first sight seem to present insuperable problems. Yet all these things were successfully accomplished by the Fleet Train without any ship having to stop. Moreover, it was done without accident, even to the replenishment of the shell-rooms and magazines of the 14-inch guns of the *King George V* class battleships—each shell for which weighs nearly three quarters of a ton.

Such manœuvres obviously called for a very high degree of seamanship, and no praise can be too high for the officers and men of the Merchant Navies of the United Nations who manned many of the ships in the Fleet Train. They were not trained in accurate station keeping or at manœuvring their ships at close quarters with other vessels. Nor had they ships fitted with special steering gear and revolution telegraphs to make their tasks easier. There were in the Fleet Train ships manned by British, French, Belgian, Dutch, and even Chinese crews. All of them displayed standards of seamanship which have seldom been equalled.

With aircraft-carriers doing such great work during the last months of the war in the Pacific, the replacement of aircraft lost in action, and of bombs expended, naturally became a major charge upon the capacity of the Fleet Train. Moreover, there was the great and constant work of upkeep of aircraft. Both aircraft and engines have to undergo extensive overhauls after a given number of hours in the air. This poses a very great maintenance problem, which must be successfully and speedily tackled. The only alternative is to replace all aircraft as soon as they are due for periodic overhaul—a system which,

THE FLEET TRAIN AT WORK

A British battleship (in foreground) and a Canadian cruiser refuelling from the same oiler, while an Australian destroyer brings in the cruiser's mail. An incident during operations off the Ryukyus.

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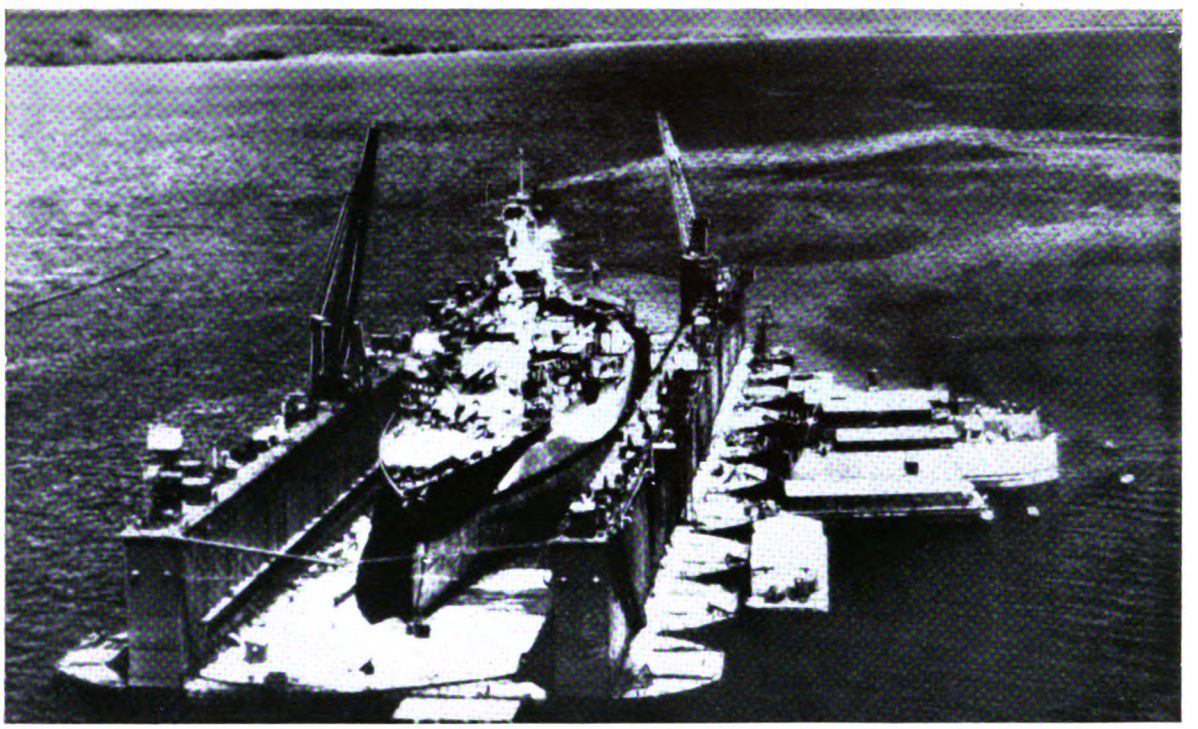

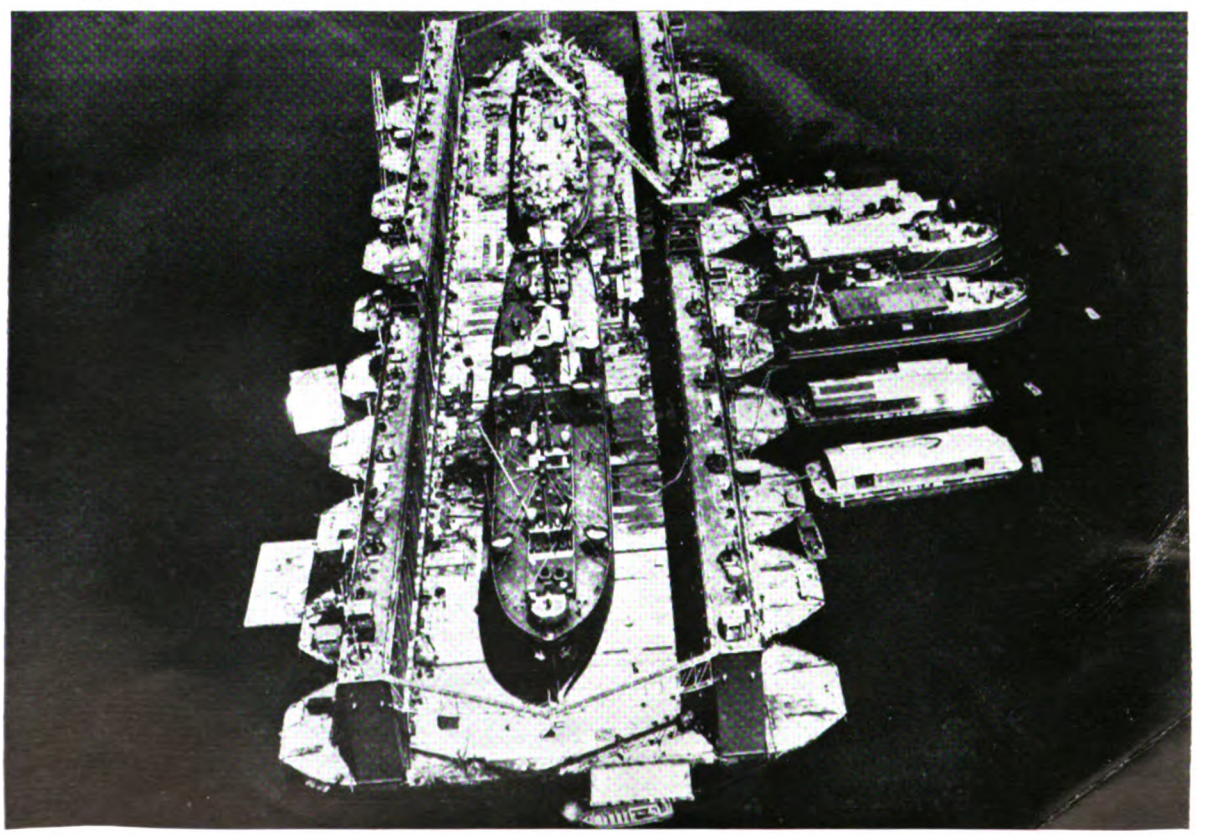

FLOATING HOSPITALS FOR WAR-DAMAGED SHIPS

Advanced Base Sectional Docks (A.B.S.D.s) are like field hospitals for damaged U.S. Navy vessels. Built in separate sections they are moved as close to the combat zone as possible, and then welded together. The largest of these docks, as seen in the bottom picture, can give attention to two ships at a time. The top picture shows a 10-section dock with a battleship ready for repair. As many as 176 ships have received attention in these docks in eight months, with a wonderful saving of time in returning them for duty.

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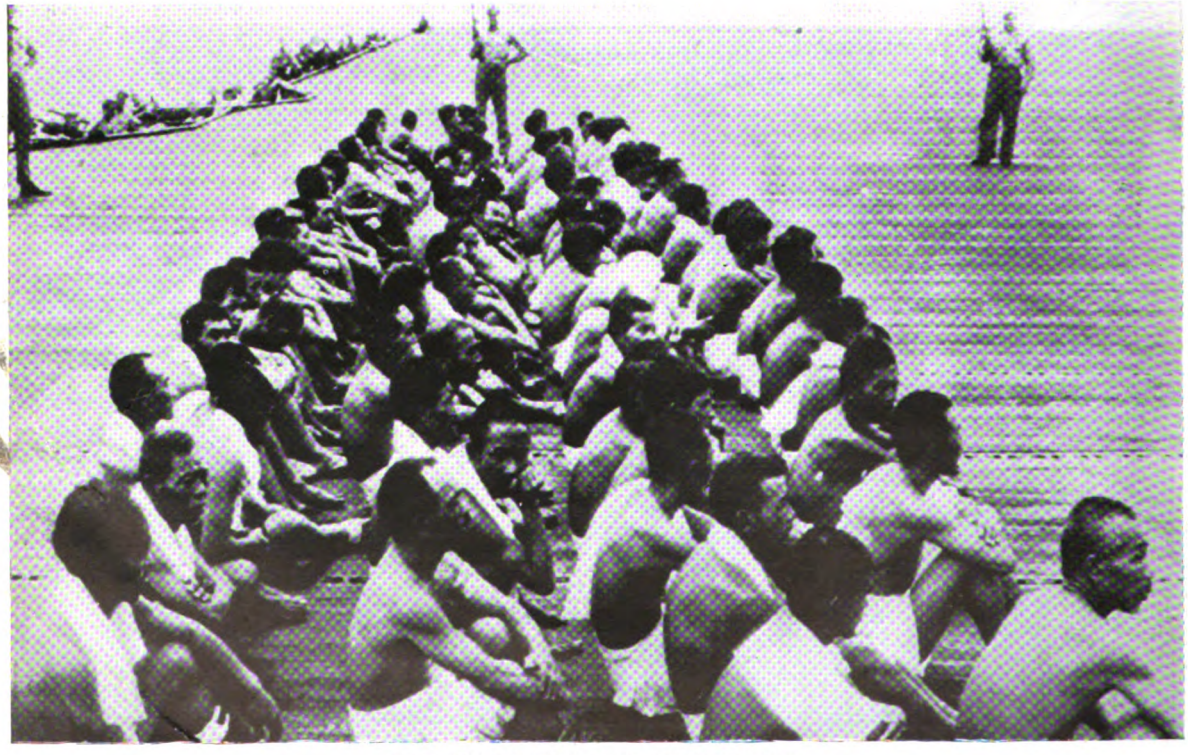
with the amount of flying done during the latter part of the war in the East, would have presented insoluble problems of production and transport.

There were three different types of ships in the Fleet Train whose duty it was to deal with the problems of replacement and overhaul of aircraft for the fighting aircraft-carriers. The first need—that for the replacement of aircraft lost in action or otherwise 'written off'—was filled by the inclusion of escort aircraft-carriers in the Fleet Train. These escort aircraft-carriers took the spare aircraft and air crews up into the forward areas. Then, on making a rendezvous with the big Fleet aircraft-carriers, the replacement aircraft could be flown off the escort aircraft-carrier and land on the big Fleet aircraft-carrier. In this way the transfer of aircraft from one ship to another at sea was far easier than the transfer of most of the other requirements of the fighting fleet. Moreover, the aircraft being transferred assisted in the other transfer problems by carrying spare parts, bombs, and even torpedoes.

The provision of ships capable of dealing with the maintenance and overhaul of aircraft was a more difficult problem. It was found necessary to provide two different types of ships for these duties, one to deal exclusively with the overhaul of aircraft engines, and the other to handle the overhaul and repair of airframes. Both were specialised tasks requiring space, workshop facilities, and skilled personnel.

Both these types of ships were provided by the conversion of escort aircraft-carriers, the hangar spaces in which were particularly suitable for adaptation as aircraft workshops. In the case of the ships specially fitted as aero-engine overhaul and upkeep vessels it was found necessary to introduce a comprehensive system of sound-lagging in order to deaden the continuous noise of aircraft engines being tested. This had to be done because the noise went on almost without a break day and night and was so nerve-racking that it affected the efficiency of both officers and men.

When the Japanese war came to an end the British Fleet Train was still being increased in size and capacity to meet the needs of the far bigger British Pacific Fleet which was planned. Steps had also been taken to provide the British Fleet Train with mobile floating docks, but Japan collapsed before these plans came to fruition. The Americans, however, had already achieved great things with mobile floating docks, some of which were built in sections of reinforced concrete, towed across the Pacific Ocean,



FOR THESE THE WAR HAD ENDED

Japanese prisoners under Marine guard on the deck of a U.S. carrier. They are members of the Japanese Engineer Corps who had spent two years on Truk and were on their way home when their vessel was sunk.

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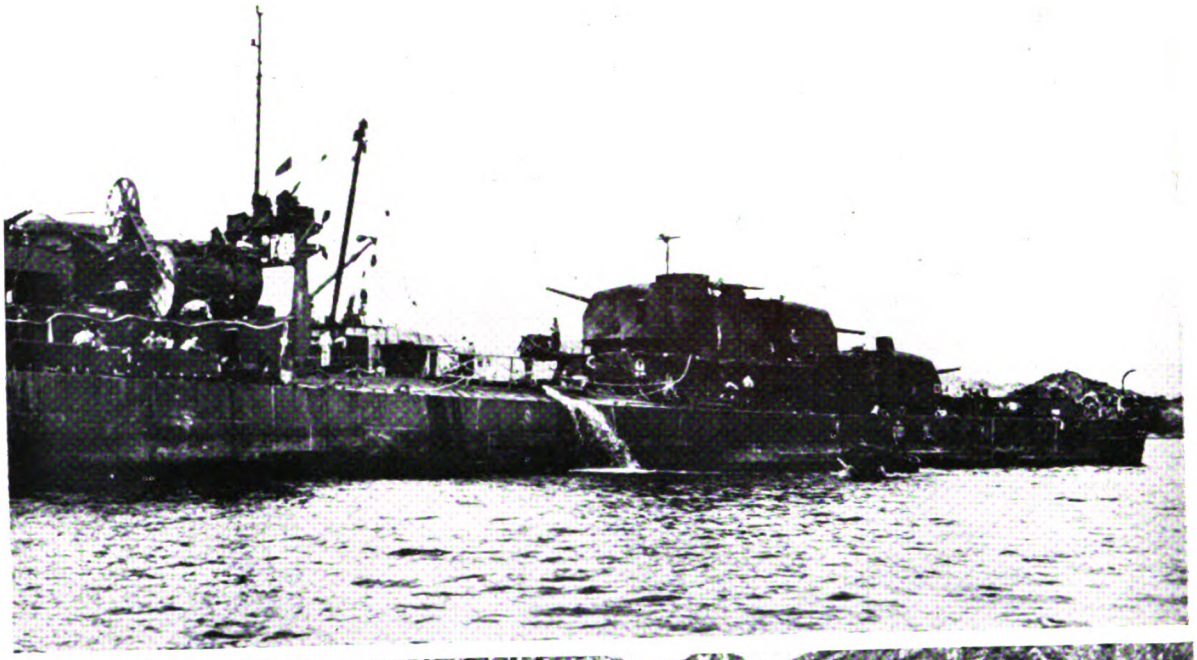

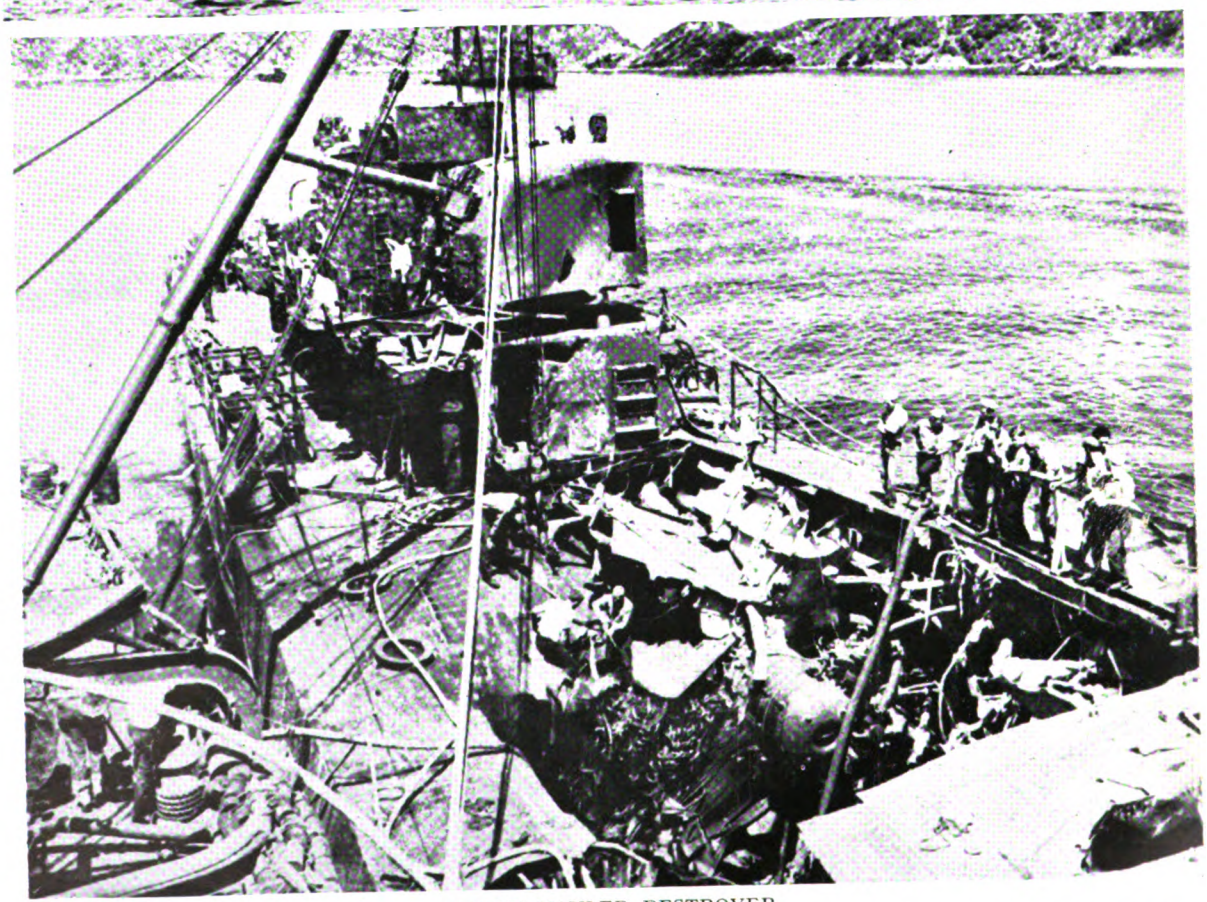

BADLY MAULED DESTROYER

Top photo: The U.S. destroyer *Newcomb* was attacked by seven Japanese suicide planes and left devoid of steam and electric power and with her stern ablaze. But she survived, and is seen here in a Pacific anchorage awaiting return to a repair yard.
Bottom photo: The extensive damage caused by the suicide planes to the *Newcomb*.

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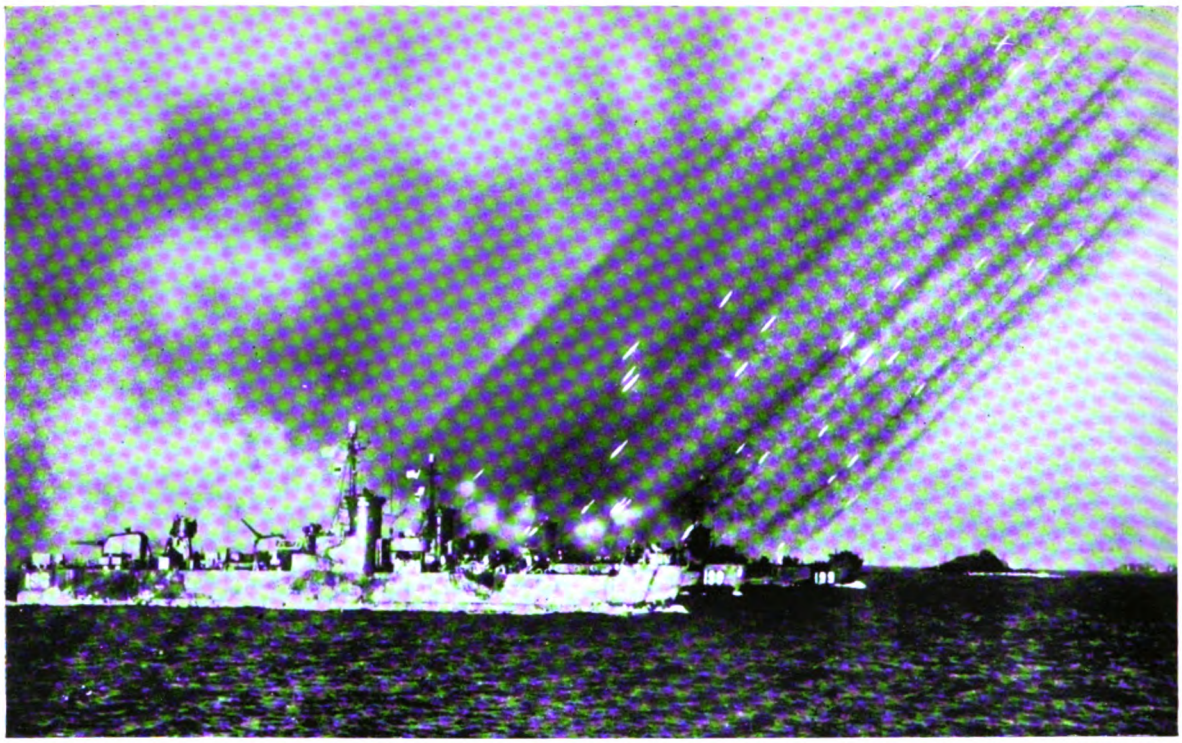
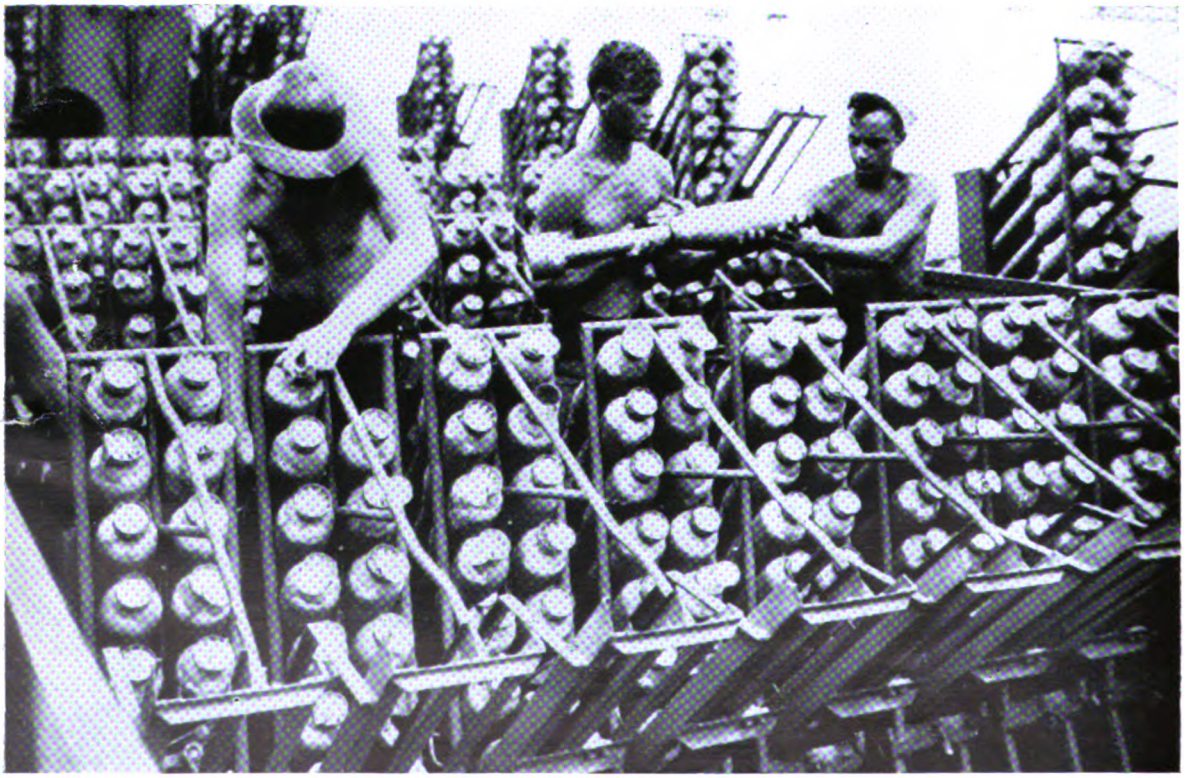


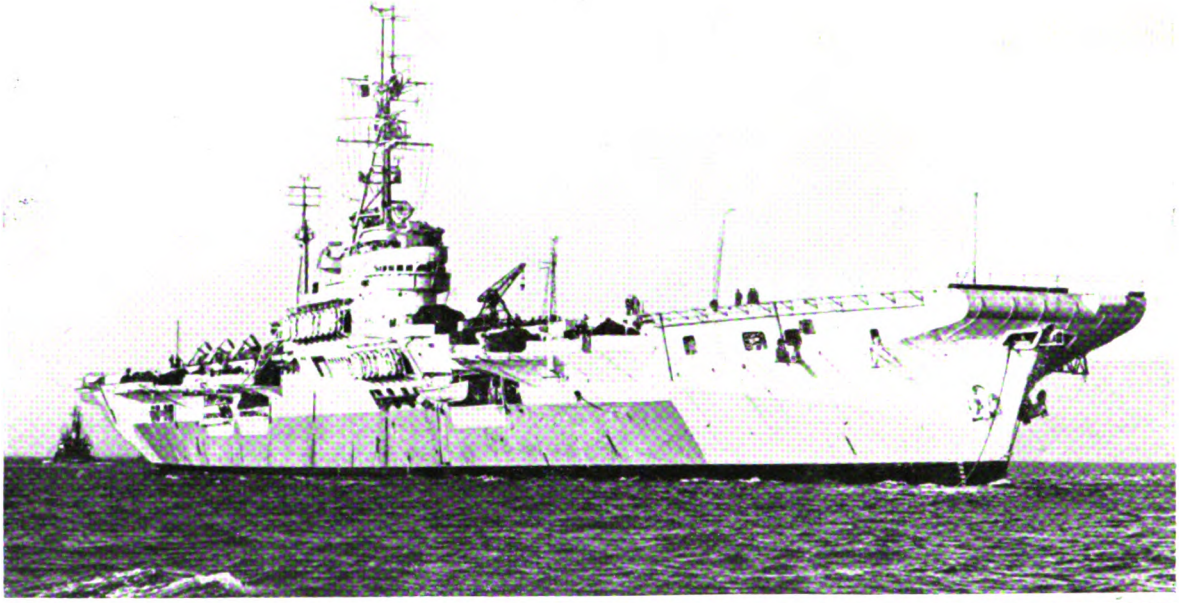
SOFTENING-UP PROCESS BEFORE INVASION

Missiles that have contributed a big share to the consolidation of American beachheads in the opening phases of various amphibious assaults—rockets that etch black lines of smoke against the sky as they streak towards Japanese installations from landing-ships.



THEY PAVE THE WAY FOR THE TROOPS

A close-up of a rocket-ship—massed batteries of rockets in the racks of an L.C.M. (Landing Craft Mechanised), the type of boat being used in invasions to fill the bombardment gap between the opening barrage of the big ships and the actual landing of the troops.



THE ROYAL NAVY'S LIGHT CARRIERS

Light Fleet carriers which operated with the Pacific Fleet. Displacement is 14,000 tons, length 695 feet, width 80 feet, speed 25 knots and they carry 33 planes apiece. Equipped in the most modern fashion, even to a cinema and soda-fountain bar, these ships are admirably designed for service anywhere in the world. Two are reproduced above : top, *Glory* ; bottom, the *Colossus* off Malta.

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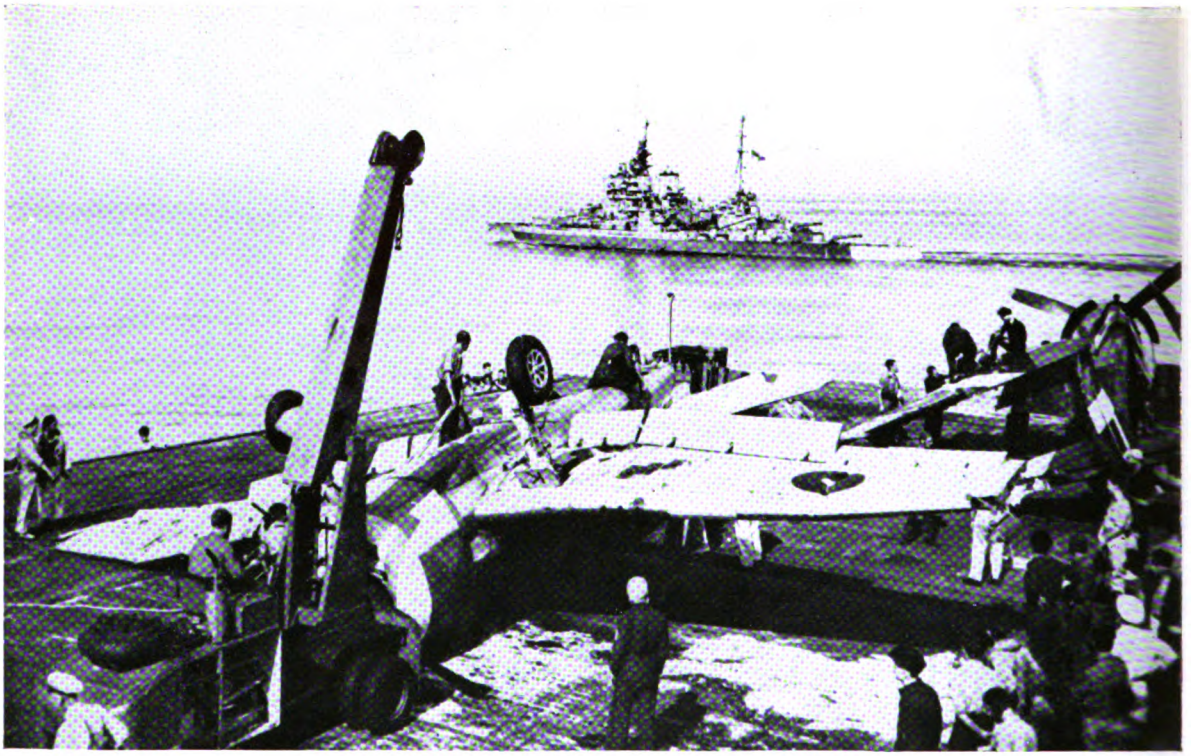
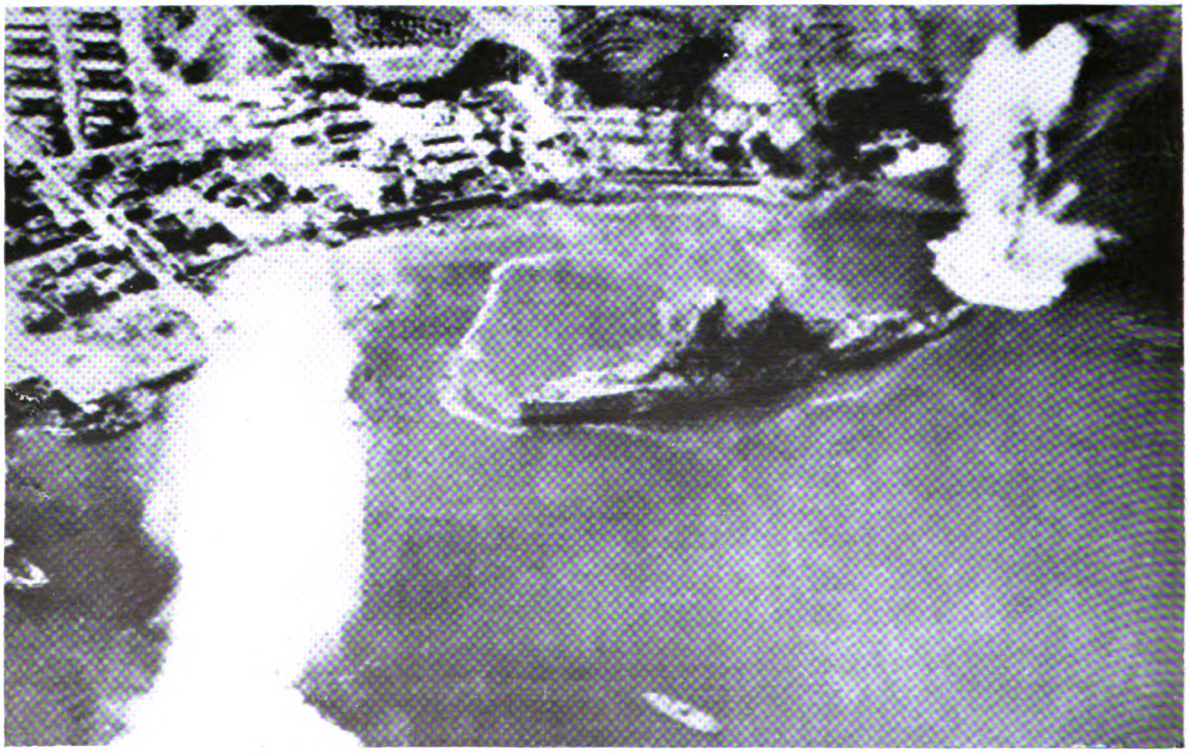


CLEARING AWAY THE WRECKAGE

A mobile crane in action on the flight-deck of a British carrier after one of her Hellcat fighters had missed the arrester wire in landing and had crashed on its back. H.M.S. *Queen Elizabeth* is in the background.



BOMBING A JAPANESE BATTLESHIP

A graphic air picture of the Japanese battleship *Haruna* at its anchorage in the Kure area while under bombardment from British and American carrier-based planes. The ship was badly damaged in this attack.

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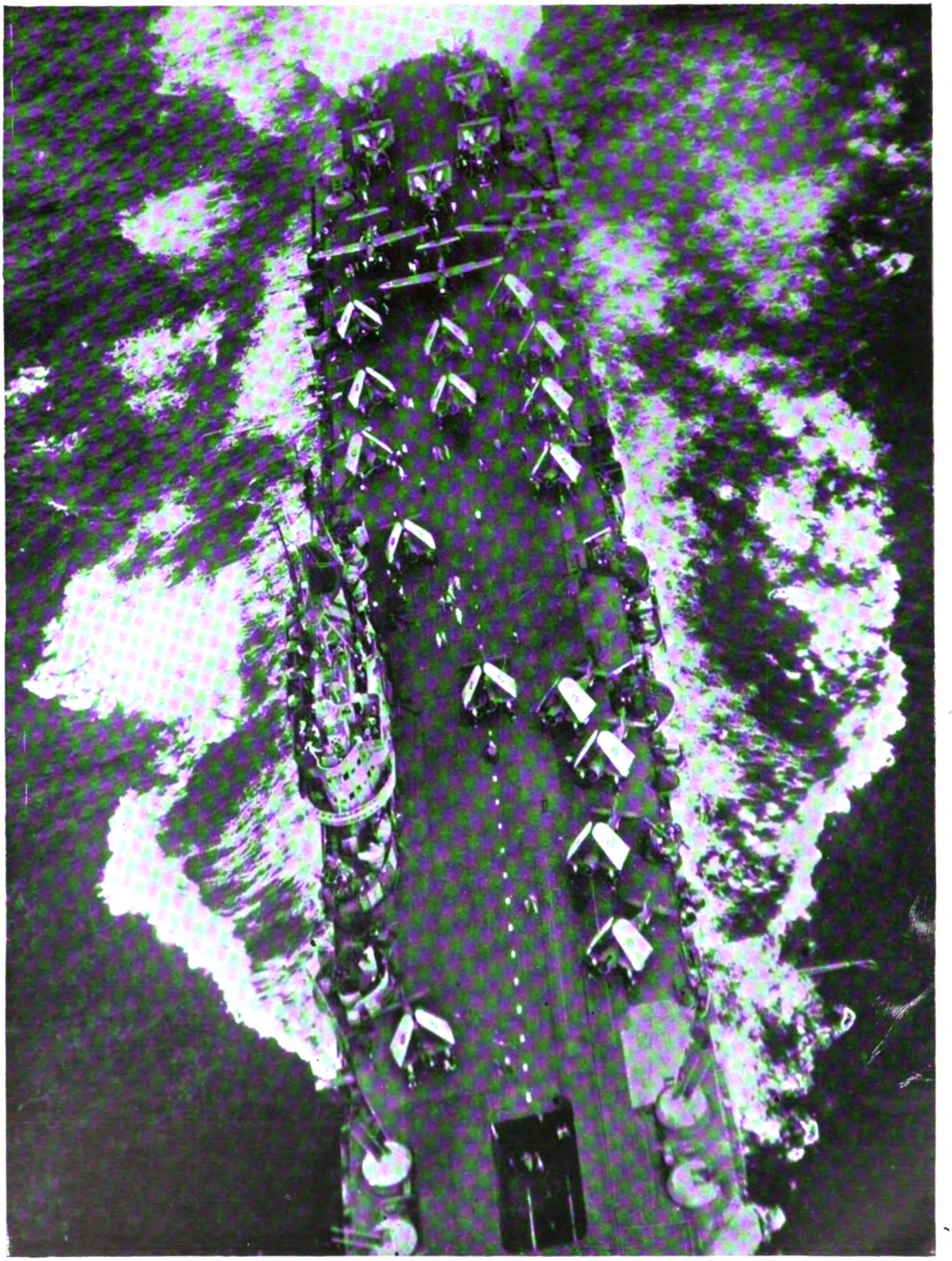

AIRCRAFT-CARRIER AS SEEN BY THE AIRMAN

A photograph from a naval plane of the British aircraft-carrier H.M.S. *Indomitable*, ploughing her way through Far Eastern waters, ready for action, her flight-deck packed with Corsair and Barracuda aircraft.

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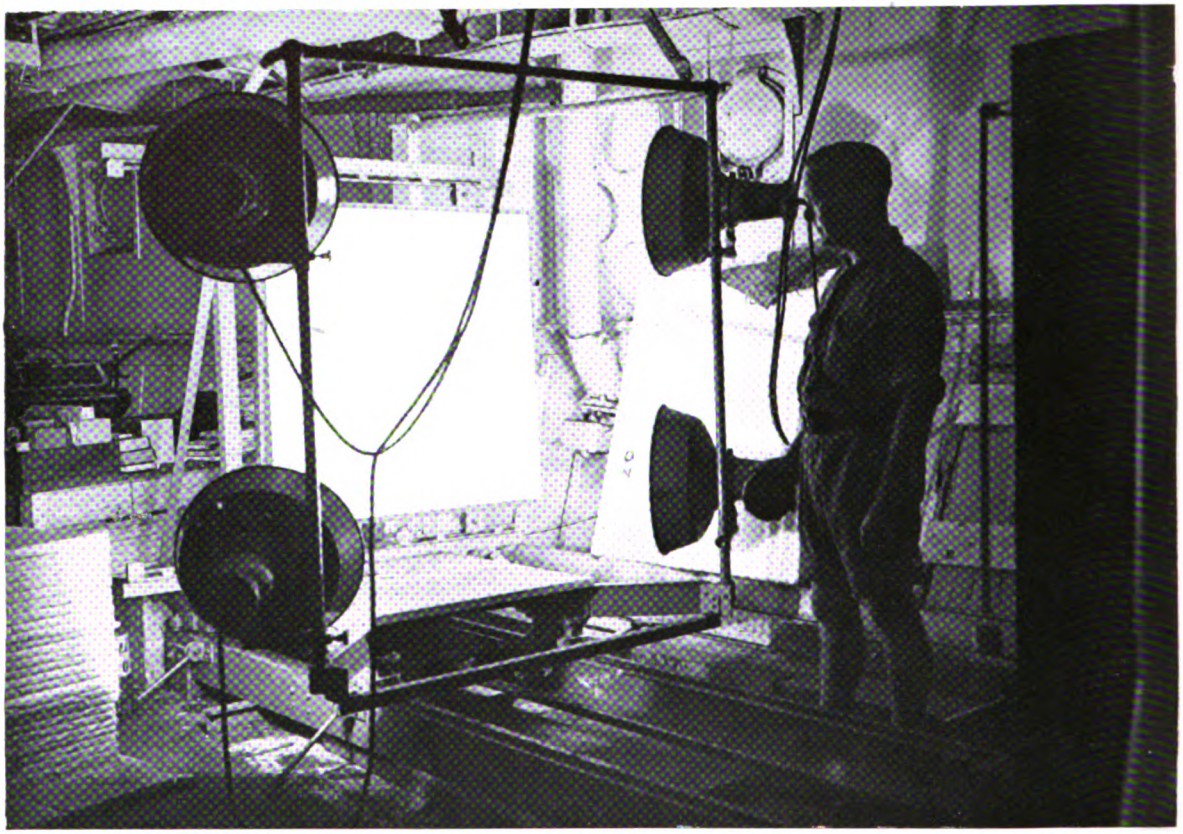

CHARTING VESSEL IN THE FAR EAST

Photographing a drawn chart on board H.M.S. *White Bear* by means of a giant camera which can take plates up to 48½" × 40½". The resulting negative is printed down on to a sensitized zinc plate from which copies of the chart will eventually be printed.

and assembled at the Pacific Island bases. One of the floating docks which had been thus prefabricated and towed thousands of miles in sections, docked and carried out repairs to the 45,000-ton battleship *Missouri*, on board which ship the Japanese surrender was later to be signed.

These American floating docks were of all sizes, and no fewer than 150 of them were provided. They proved of special value in enabling damaged ships to be repaired in the minimum of time and thus to return to the fighting zones at the earliest possible moment. The high proportion of American aircraft-carriers and other ships damaged in the Okinawa operations made this a matter of great importance.

The way in which these floating docks were handled by the American Navy and technicians would have astounded the marine engineers of a decade ago. On one occasion a badly damaged American destroyer was picked up at sea and placed in a 500-foot floating dock. The dock was rolling 9 degrees each way, but the destroyer was successfully docked and braced and shored against the roll so efficiently that repairs to the ship could be rushed forward while the dock was still in tow. The work went on while the dock was towed more than 70 miles to the nearest sheltered anchorage, and the repair of the destroyer and her return to the fighting fleet was thus considerably expedited. It was the first time that such an operation had ever been done, and the Navy Department afterwards said of it: "It was an experimental run that paid off high dividends, not only in quick salvage of the destroyer, but in opening possibilities of similar operations in the future."

CHAPTER XVIII

WHILE in the north-west Pacific the war was being carried ever closer to the main Japanese islands, and was concerned with the seizure of bases within striking distance of Japan in preparation for the final offensive, much was happening farther south. The Japanese forces in the southern territories which

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A BUSY SCENE IN MID-PACIFIC

A landing craft alongside a U.S. warship while fresh stores of ammunition are being transferred. The big guns of the warship are ready should the enemy attempt to interfere.

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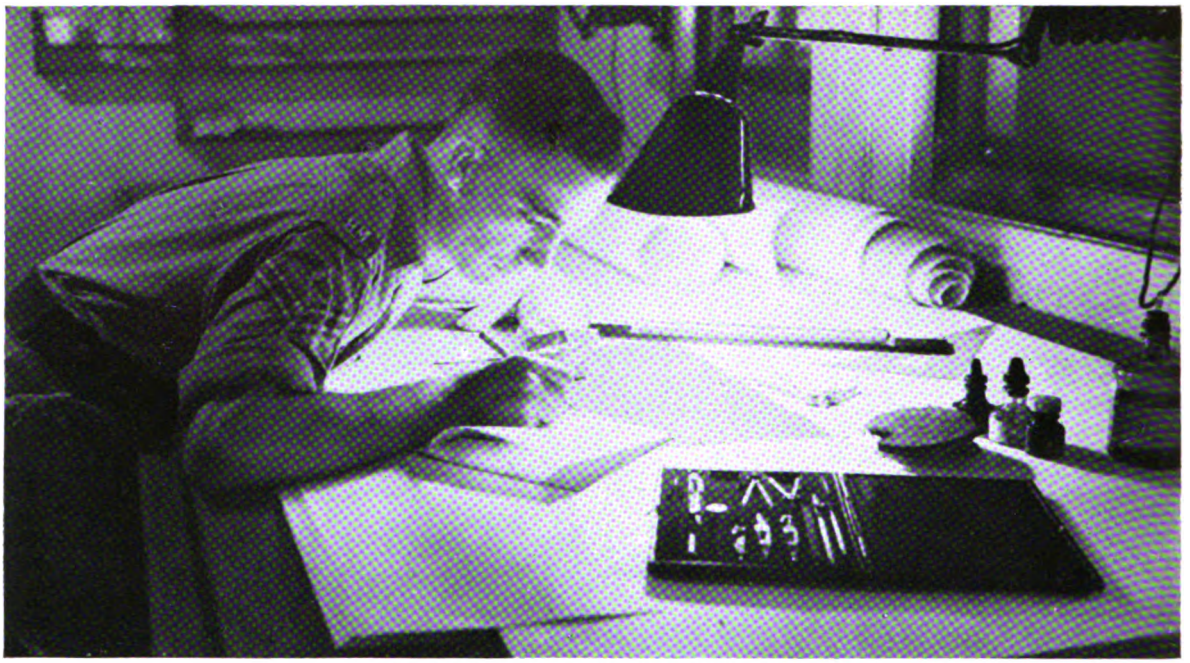
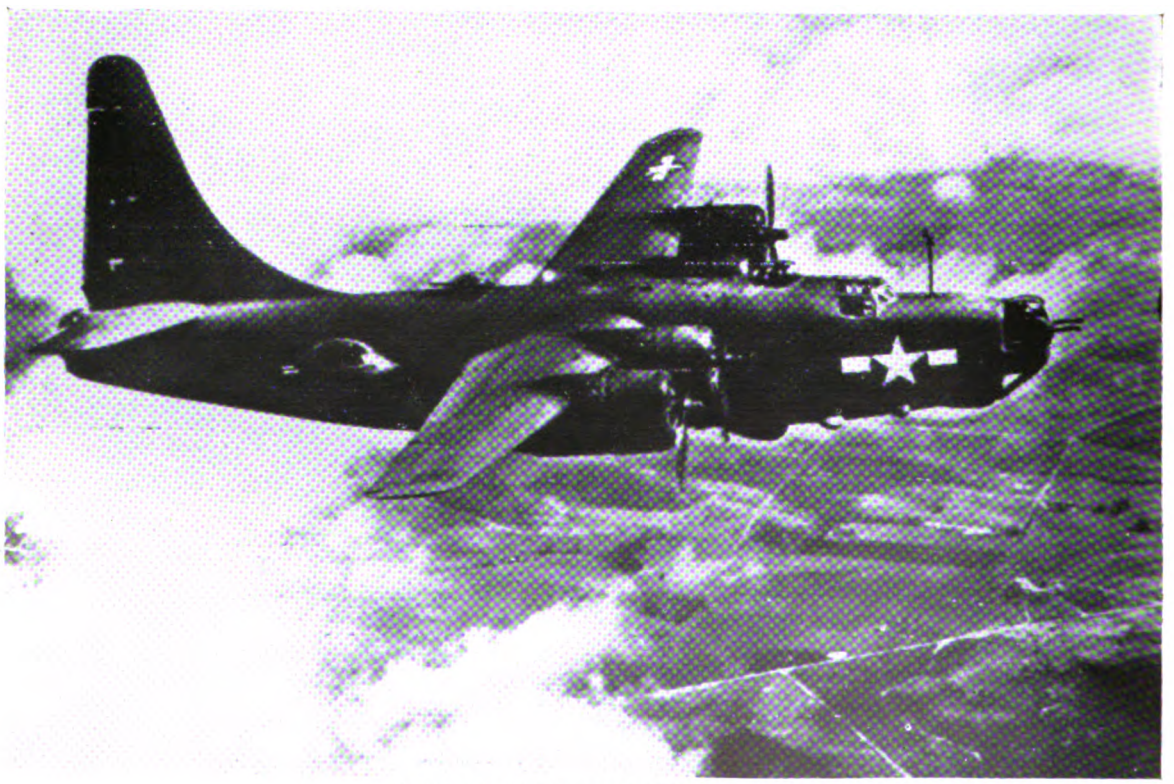


CHARTING VESSEL IN THE FAR EAST

H.M.S. *White Bear*, a Hydrographic survey-vessel. She acts as headquarters for smaller vessels which penetrate small creeks and rivers to survey areas either uncharted or not charted for many years. The data obtained by these ships is brought to the "Mother ship" and then transformed into vital charts for use by Allied shipping : a Royal Marine at work on the plate of a chart.



AMERICAN NAVY'S PRIVATEER

Capable of operating over 3,000 miles and armed with two .50-calibre machine-guns in each of its **six** power-driven **turrets,** the U.S. Navy's Privateer PB4Y-2 was used against the Japanese.

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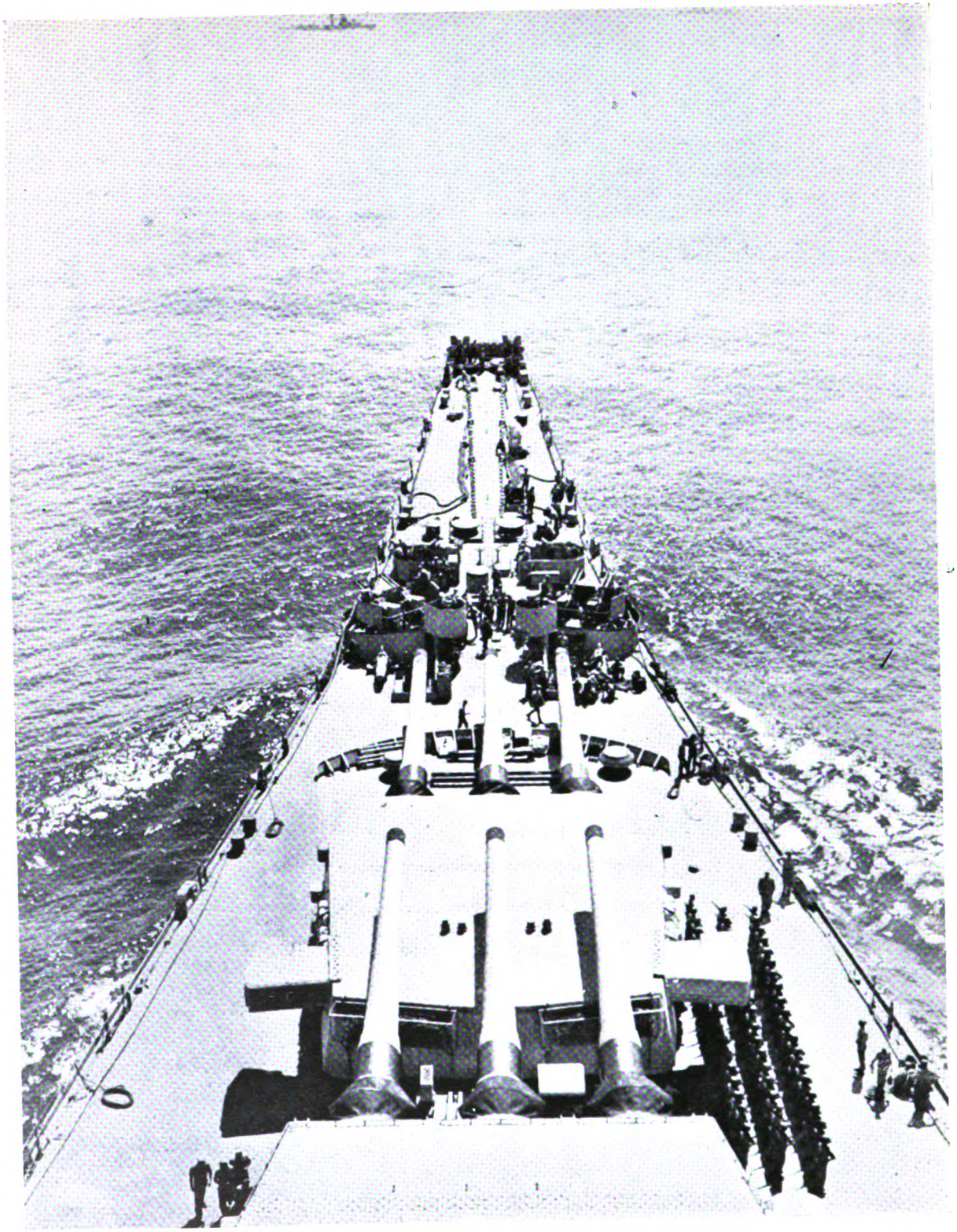

FORWARD VIEW OF U.S.S. *IOWA* FROM THE BRIDGEHEAD

The slender symmetry of the United States Navy's 45,000-ton battleship *Iowa* is sharply outlined by this view of the bows from the bridgehead as she ploughs her way through Pacific waters. The *Iowa* has a complement of over 2,000 and an overall length of 860 feet. Her armament consists of nine 16-in. guns, twenty 5-in. guns and 128 smaller guns, including A.A. guns.

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Specially drawn

THE ROYAL NAVY STRIKES A BLOW

The Royal Navy busy preparing the way for attacks on Singapore. At the end of July, 1945, a British East Indies Fleet task force swept a way through minefields off the Malay Peninsula in a three-day assault off Puket Island, near Southern Siam. Attacks were also made on airfields and railways along the west coast of Malaya. Considerable opposition from Japanese aircraft, including suicide planes, was encountered, but our minesweepers, escorted by a strong naval force and carrier-borne Hellcat fighters, managed

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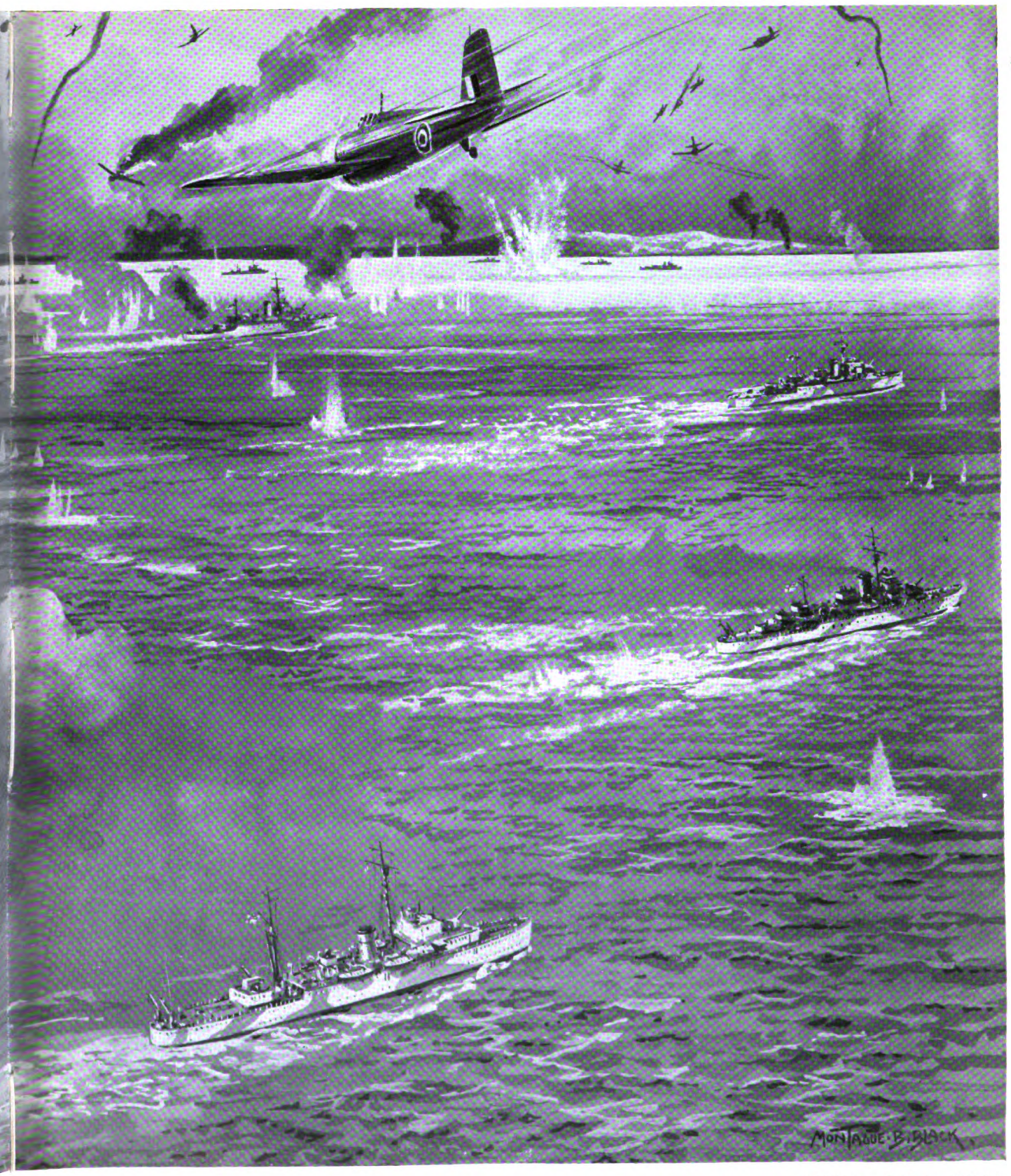

by MONTAGUE B. BLACK, F.R.S.A.

AT THE ENEMY IN THE INDIAN OCEAN

to clear a channel in the northern approaches to the Malacca Strait, key to Singapore. One minesweeper was lost—H.M.S. *Squirrel*—which struck a mine and had to be sunk. Hellcats kept off most of the Japanese air attacks, but of the few that did get through the fighter screen, two suicide planes perished in fruitless assaults, and a dive-bomber was shot down in flames while making a swoop on one of our carriers. An impression of the operations is given in this drawing by our artist, Montague B. Black, F.R.S.A.

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they had overrun, and their increasingly precarious sea communications with those territories, were subject to continuous attack and pressure by the Allies.

In retrospect it seems almost as if this phase of the war in the south was equivalent to beginning the mopping up operations in the outlying territories before the main enemy had been defeated—a course which the old-time theorists on the art of war would most surely have deprecated. It must be remembered, however, that the early collapse of Japan was not then considered likely. The Combined Chiefs of Staff of the Allies had, in fact, planned on the assumption that victory over Japan was unlikely to be won without large-scale invasion of the Japanese main islands or within a year of the defeat of Germany. Thus the pressure in the south was part of the general Allied offensive. Moreover, it was closely linked with events and planned operations far to the north, for it was designed to ease the gigantic problem of supply for the great forces being assembled for the final assault on Japan's main islands, while at the same time denying supplies to the enemy.

Fleet Admiral Ernest J. King, Commander-in-Chief of the United States Fleet and Chief of Naval Operations, made this clear in his official report to the United States Secretary of the Navy. He wrote :

"The operations against Borneo, which began in May, were designed to deny the enemy the fruits of his conquests in the Netherlands East Indies and his use of the approaches to those areas. These included the capture of Tarakan to obtain its petroleum resources and to provide an airfield for support of the Balikpapan operation ; the seizure of Brunei Bay to establish an advance fleet base and protect resources in that area ; and the occupation of Balikpapan to establish naval air and logistic facilities and to conserve petroleum installations there."

Brunei Bay, which is guarded by Labuan Island, is in British North Borneo, on the west coast of that great island. It is thus directly opposite the 'bulge' of French Indo-China, from which it is rather less than 500 miles distant. A fleet base there would therefore play a great part in the final severing of all Japanese sea communications with Singapore and Sumatra.

ENEMY SUICIDE BOATS ON OKINAWA

These two Japanese suicide boats, captured by U.S. Marines before they could be put into action, are typical of those found during the early stages of the struggle for Okinawa. Chalked on the foremost boat is the warning signal, "Danger, these boats are booby-trapped."

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SUBMARINE MEN RESCUE MEN OF THE SKY

The work of the Pacific Fleet's submarines was not always destructive. With airmen busy over Japan they patrolled hostile waters on a mission of mercy, often snatching from death at sea flying men who had been forced to bale out and take to their rubber dinghies.

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ONE OF AMERICA'S MIGHTY WARSHIPS

The 27,000-ton U.S.S. *Guam*, one of two new-type battle-cruisers, which has done valiant service in the Pacific.

FLYING TO AN AUSTRALIAN HOSPITAL

British naval casualties in the Pacific battle zones were flown to hospital in Sydney by air ambulance, as seen here—with a smiling nurse in attendance.

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KEEPING UP ITS SPLENDID WAR RECORD

An American destroyer (left) transferring wounded men from another ship to the *Santa Fé* after an action in the Pacific. This U.S. light cruiser had a splendid war record of over two years of continuous frontline duty without a major overhaul. She fought in many big engagements and it was the *Santa Fé* also which took more than 800 men from the stricken carrier *Franklin* as it rocked under fire and explosions.

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GETTING THE PLANE READY FOR ACTION

Men of the crew of an Essex class carrier of the 3rd U.S. Fleet loading rockets on to a plane about to take off to attack the Japanese homeland.

Tarakan and Balikpapan are both on the east coast of Dutch Borneo. Apart from being important oil centres, they are excellently placed to dominate the Macassar Strait route to Java, which runs southward between Borneo and the Celebes.

In order to carry out these operations the Borneo Attack Force was formed under the command of Vice-Admiral D. E. Barbey of the United States Navy. The force was composed of both American and Australian warships and American and Australian air forces. Most of the troops involved were Australian.

The first of the Borneo operations was that directed against Tarakan, where the Japanese garrison was estimated to consist of about 3,000 men. Numerous neutralising air raids were made by the Australian First Tactical Air Force and the United States Thirteenth Air Force on the enemy airfields in the vicinity in order to minimise the strength of any possible air reaction by the Japanese. Then, on April 27th, Australian and American cruisers and destroyers began a systematic bombardment of the defences on the island. This bombardment was continued until May 1st, during which time the approaches to the beaches were cleared of mines by the minesweepers. On May 1st the assault troops, consisting of units of the Ninth Australian Division, were successfully put ashore. So effective had been the bombardment that these troops met with only light opposition from small arms fire, and this was rapidly quelled. The first of the Borneo operations had gone entirely "according to plan."

The next Borneo operation was that against Brunei Bay. The same technique was used, although this was a much larger operation. First there were ten days during which the American and Australian airmen neutralised enemy airfields in the area. They also shot up and harassed Japanese troops movements and shipping, thus preventing the enemy from reaping any advantage from the fact that there was no element of surprise in the Allied plan. Then, three days before the landings, the minesweeping began under the protection of strong covering fire from Rear-Admiral Berkey's cruisers and destroyers.

The minesweeping in this area proved to be a heavy task. In a week no fewer than 458 mines were swept. It was in Brunei Bay that the American minesweeper U.S.S. *Salute* was lost. This was a

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MEN AND MACHINES IN THE FAR EAST

One of the many jobs aboard an aircraft-carrier—two air mechanics turning the propeller of a plane on board H.M.S. *Indomitable*, one of the Royal Navy's big carriers in the Pacific.

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particularly tragic loss because the U.S.S. *Salute* had built up a remarkably fine record of minesweeping in the Pacific. She had, in fact, swept 143 Japanese mines, and it was the 144th that led to her destruction.

The *Salute* was leading a formation of three minesweepers when she hit a shallow contact mine three miles off the Borneo coast. The mine exploded under the bottom amidships and blew a hole right through the centre of the ship. Nine men were killed and ten injured, and survivors were tossed six feet into the air by the violence of the explosion, which lifted the vessel almost completely out of the water. Two infantry landing craft at once came alongside the crippled minesweeper to render assistance, while the U.S.S. *Cofer* sent boats with a medical officer and medical supplies. Very soon salvage vessels were busy trying to pump water from the flooded compartments, but it was of no avail. The minesweeper sank some seven hours after the detonation of the mine.

On June 10th, after an hour of heavy bombardment from the ships, which forced the Japanese to abandon their positions on the beaches and their landward approaches and to move inland, the assault troops of the Ninth Australian Division were successfully put ashore. Three landings were made, one on the island of Labuan and two on the mainland of Borneo—one on each of the horns of land embracing Brunei Bay. Once again the troops met with only light resistance, which was quickly dealt with.

During the Brunei Bay operation Rear-Admiral Berkey had to consider possible interference with the landings from seaward by units of the Japanese fleet, for it was known that the Japanese still had two cruisers in the South China Sea area. These two Japanese cruisers would have been an insignificant force had they met the combined American and Australian squadron in the open sea. It must be remembered, however, that any force is always extremely vulnerable while carrying out a big combined operation involving the landing of troops and supplies. Under these conditions even a small and seemingly insignificant enemy force could, by carrying out a sudden raid on the anchorages off the assault beaches, inflict very serious loss and damage.

AMERICAN AND BRITISH WARSHIPS

Ships of the U.S. 3rd Fleet and a task force of the British Pacific Fleet under the command of Admiral W. F. Halsey steam in close formation off the Japanese coast following Japan's offer to surrender. Vice-Admiral Sir Bernard Rawlings was in command of the British force.

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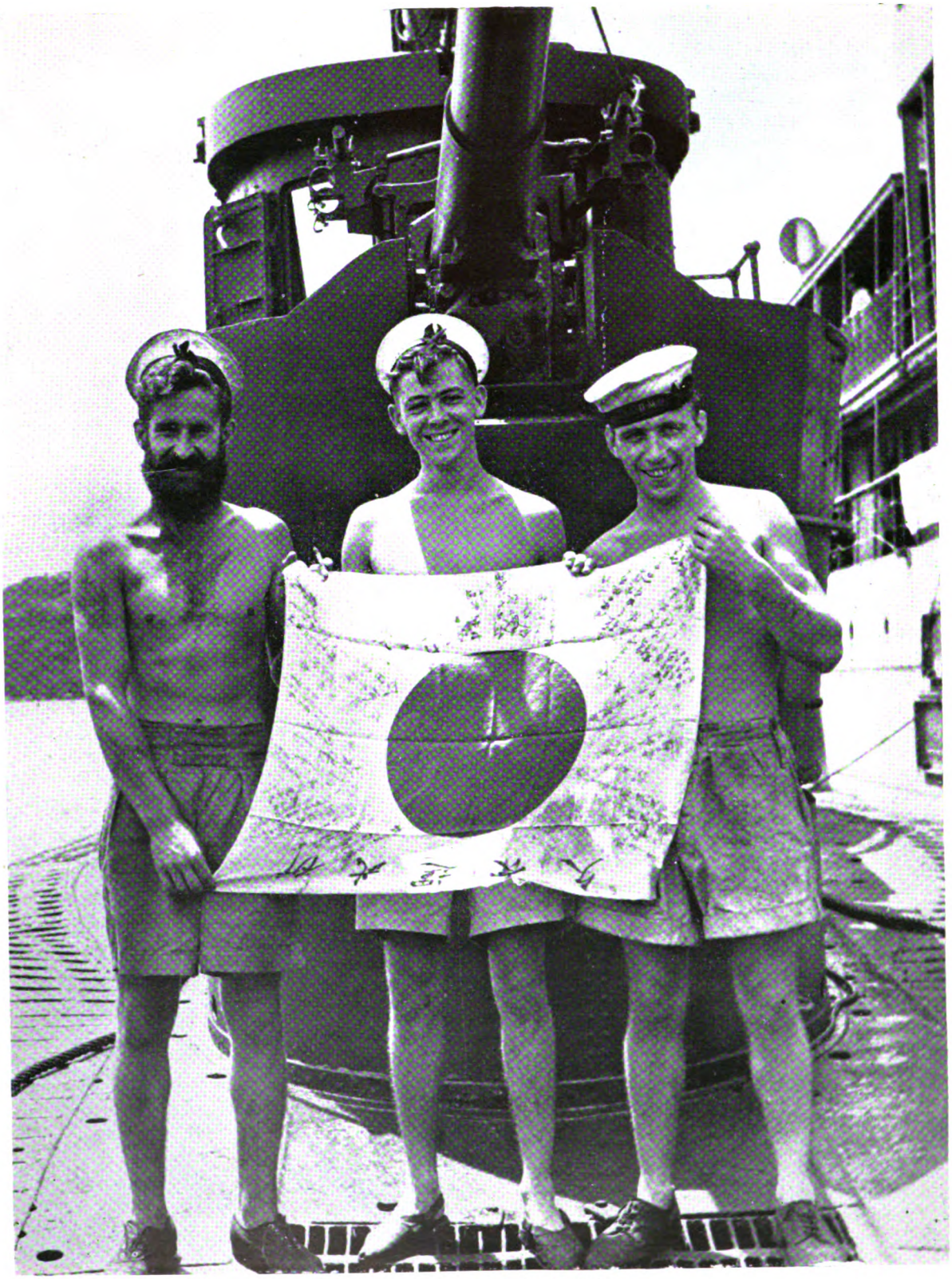

BACK WITH SMILES OF VICTORY

Three members of the crew of H.M. Submarine *Trident*, back in harbour after a strafing mission. They are holding one of the flags they found in a landing craft after the submarine's shells and bullets had wiped out all the Japanese on board.

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Rear-Admiral Berkey had therefore to take steps to guard against the possibility of a surprise raid by Japanese cruisers. This he did by establishing a distant covering force of cruisers and destroyers under the command of Rear-Admiral Riggs, U.S.N. This distant covering force took up its position on the day before the Brunei Bay landings and established a patrol 50 miles to the west of Brunei Bay.

This distant covering force saw nothing of the enemy, and Rear-Admiral Berkey was able to withdraw the force on June 11th—the day after the landing. This he was able to do because it then became known that the more important of the two Japanese cruisers had been torpedoed and sunk by a British submarine off the Malay coast.

The submarine was H.M.S. *Trenchant*, commanded by Commander A. R. Hezlet, D.S.O., D.S.C., R.N. The Japanese cruiser was a ship of the 10,000-ton *Haguro* class, armed with ten 8-inch guns, capable of a speed of 33 knots, and carrying a complement of about 700 officers and men. It was subsequently established that this cruiser was the *Ashigara*.

H.M.S. *Trenchant* was on patrol to the east of Singapore when, on June 8th, she was sighted and fired on by a large Japanese destroyer. Commander Hezlet successfully avoided the destroyer, which he saw was acting as advanced escort for the big cruiser, and turned H.M.S. *Trenchant* to attack the cruiser with torpedoes. The torpedoes hit, and blew the bow off the cruiser. They also started a fire on board. A few minutes later Commander Hezlet saw the cruiser capsize and sink. The Japanese destroyer carried out a counter-attack, but this was ineffective and Commander Hezlet brought H.M.S. *Trenchant* back to her base, having scored a most important success against the dwindling Japanese navy.

This success had a sequel a few days later on board the submarine, when Rear-Admiral James Fife, U.S.N., commanding the submarines of the United States Seventh Fleet (with which H.M.S. *Trenchant* was operating), presented Commander Hezlet, in the name of the President of the United States, with the American Legion of Merit, Degree of Commander. Fleet-Admiral King, Commander-in-Chief of the United States Navy, signalled his congratulations to the British Board of Admiralty and asked that they should be passed on to all concerned.

The operations against Balikpapan, for which Rear-Admiral Noble, U.S.N., was in command of the attack group, with Rear-Admiral Riggs commanding the cruiser covering force, were preceded by much heavier air strikes than had been the case in the assaults on the Brunei Bay area or on Tarakan. For more than a month before the assault the American and Australian Air Forces flew heavy strikes against Japanese airfields and defence installations. Often during this period as many as 100 sorties were flown in a day.

This more intense preparation was necessary because it was known that Balikpapan was very heavily defended. There were Dutch defences of importance, and these had been greatly added to by the Japanese, who were fully aware of its importance, both as a strategic point guarding the Macassar Strait and as the outlet for the great oilfields of that part of Dutch Borneo.

"D-day" for the assault on Balikpapan was fixed for July 1st, but for some anxious days before that date there was some doubt whether a postponement would have to be made. This was because of the strength of the Japanese defences and the very large numbers of mines which had been sown in the

BRITISH NAVAL LEADER
Admiral Sir Bruce Fraser, G.C.B., K.B.E., C.-in-C. British Pacific Fleet.

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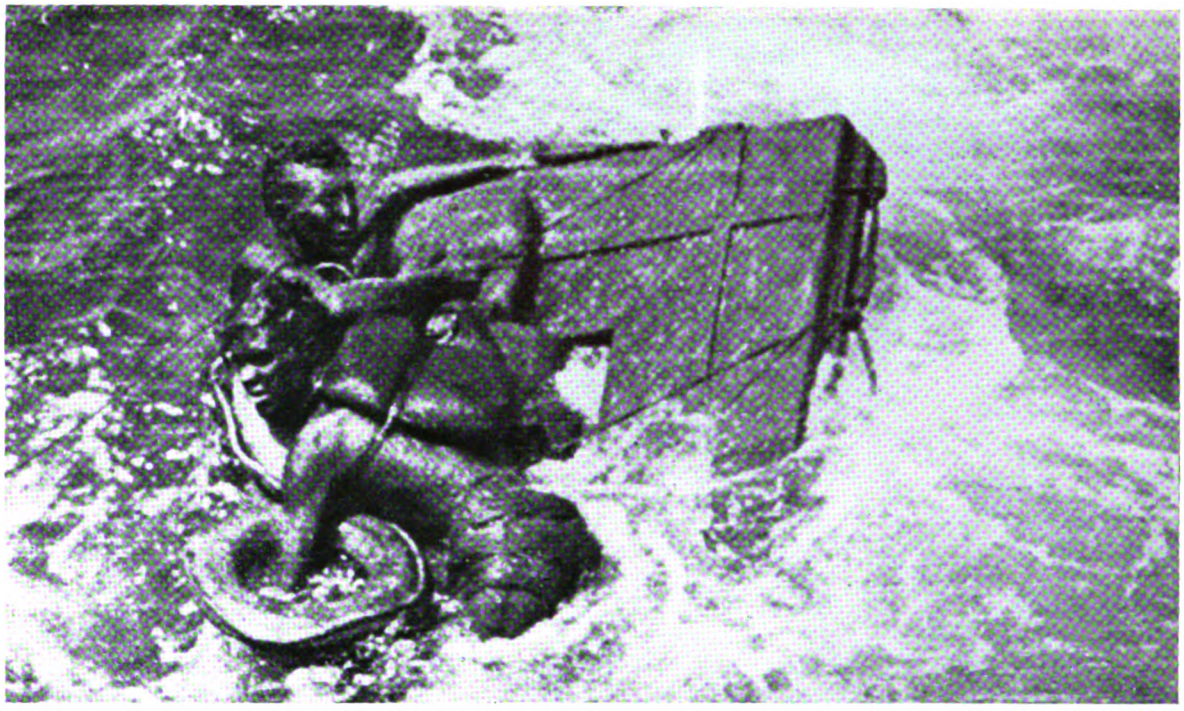

DRAMATIC RESCUE IN THE CHINA SEA

Four American submarines—*Sealion, Barb, Queenfish* and *Pampanito*—assisted by the submarine *Growler*, reported lost, sank at least 10 Japanese ships and rescued 159 British and Australian prisoners-of-war in a dramatic China Sea action which lasted for five days, in face of both heavy enemy attacks and a raging typhoon. The prisoners were survivors of the enemy transport *Rakuyo Maru*, sunk by the *Sealion*. Some of them are here seen being rescued by the *Sealion* and the *Queenfish*. Many of them, after three days in the water, were too weak to help themselves.

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Specially drawn

HEADING FOR JAPAN FOR THE SIGNING

As the War in the Far East approached its final stage one of the greatest armadas in history was being deployed off Japan. More than 400 ships—aircraft-carriers, battleships, cruisers, destroyers, minesweepers, transports and assault craft. The majority were flying the Stars and Stripes, but merged with them were warships of Great Britain, Canada and New Zealand. The High Command remained American, in keeping with the dominant part played by the United States in the Pacific victory. The Fleet first saw Japan

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by MONTAGUE B. BLACK, F.R.S.A.

OF THE SURRENDER IN TOKYO BAY

from action stations, prepared for any emergency, but the feeling was growing that the landing would be peaceful. The sight of land was welcome to the British force, which had been at sea for 44 days without sight of land. Some ships had re-fuelled 10 times, often from American tankers when the over-strained British supply-lines were not available. This drawing by our special artist, Montague B. Black, F.R.S.A., shows the U.S.S. *Missouri* (on which the surrender terms were signed) heading a line of warships towards Japan.

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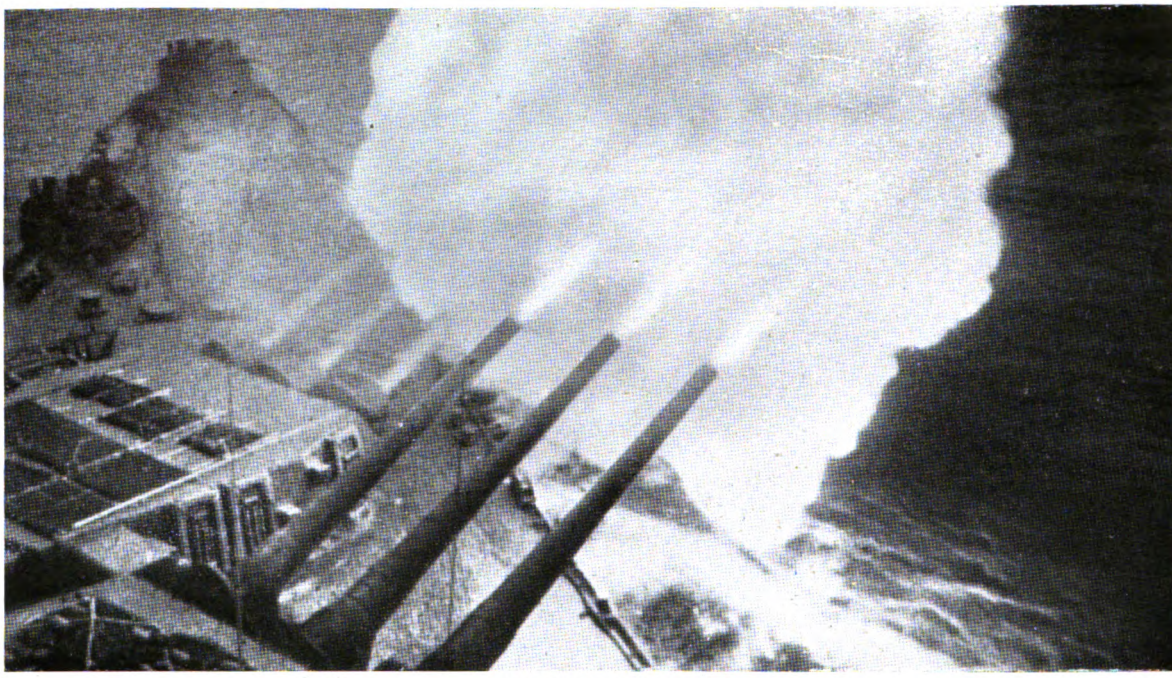

BIG GUNS SPEAK

A battleship of the U.S. Pacific Fleet firing a salvo from her 16-in. guns against Japanese shore installations on the homeland.

approaches. The actual minesweeping was begun 16 days before "D-day" under covering fire from cruisers and destroyers.

This covering fire from the ships provoked very strong reaction from the Japanese defenders. Three minesweepers were sunk by mines and three others were damaged by the fire of the Japanese shore batteries. For a time it seemed that the Japanese defenders were going to exact a very high price for Balikpapan. The chief trouble was that the minefields extended far off-shore, so that the ships could not approach close enough to the shore for their bombardment to be really effective without passing through the unswept minefields, while the minesweepers were forced to work ahead of the bombarding ships in mined waters which were within range of the large coastal guns. Moreover, the Japanese had added to the defences an intricate system of underwater obstacles fitted with explosive charges. These had to be dealt with by the Combat Demolition Groups of the United States Navy while they were under fire from the shore batteries.

On June 24th, however, destroyers were able to get close enough inshore for their guns to be able virtually to smother the guns of the shore batteries. It was this fact that enabled the operation to proceed in accordance with the plan.

The Balikpapan operation required a very large fleet of warships. There were present no fewer than nine cruisers, two of which belonged to the Royal Australian Navy and one of which was Dutch, as well as large numbers of destroyers and minesweepers. In addition to these ships there was in the offing a group of three escort aircraft-carriers with destroyer escorts. These aircraft-carriers provided the short-range fighter cover for the operation, since the established air bases in Allied hands were too far away to enable adequate air support to be forthcoming, especially if bad weather should set in.

Immediately after an intense two-hour naval bombardment on the morning of July 1st the assault troops went ashore under cover of the carrier-borne aircraft and naval supporting fire. There was considerable opposition and fire from artillery, mortars, and small arms. Nevertheless, the assault troops were landed without a single casualty. Casualties were, however, suffered as the troops moved inland against stiffening Japanese resistance. This Japanese resistance made it necessary for a considerable volume of naval supporting fire to be given to the troops, and the cruisers of attack group were firing day and night for an entire week in providing this supporting fire for the troops.

Gradually, however, the Japanese resistance was broken. The three most important centres of Borneo were again in Allied hands.

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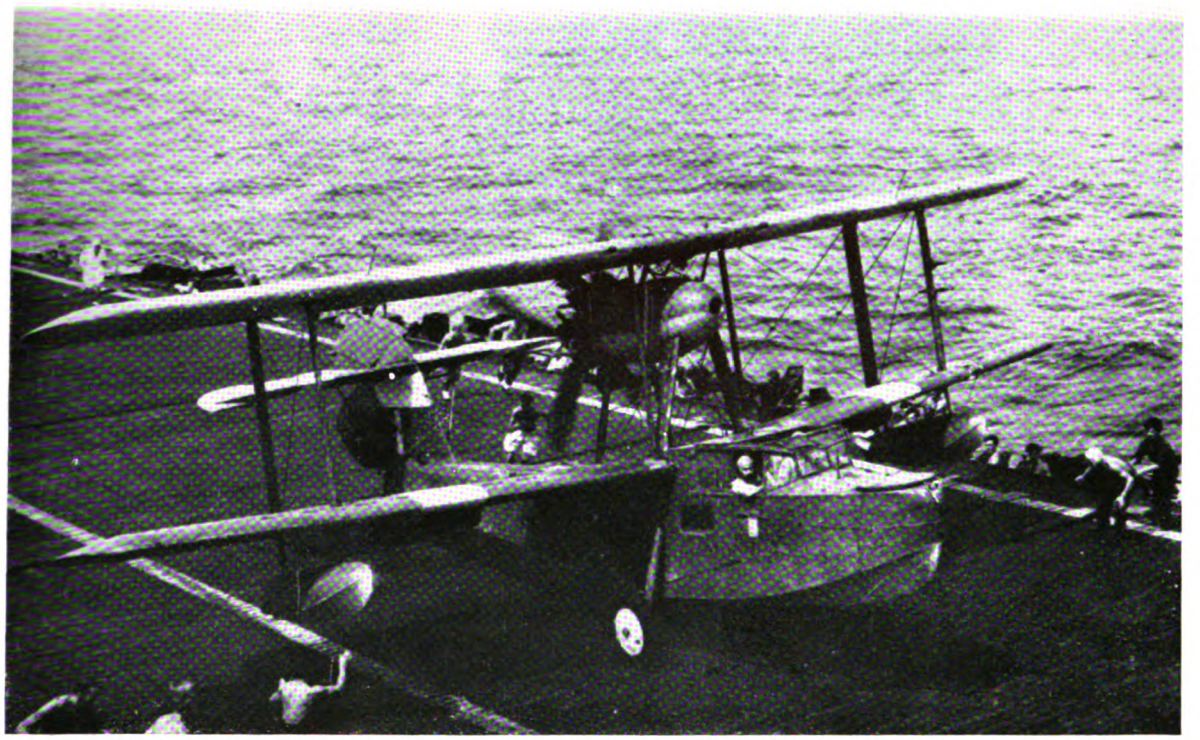

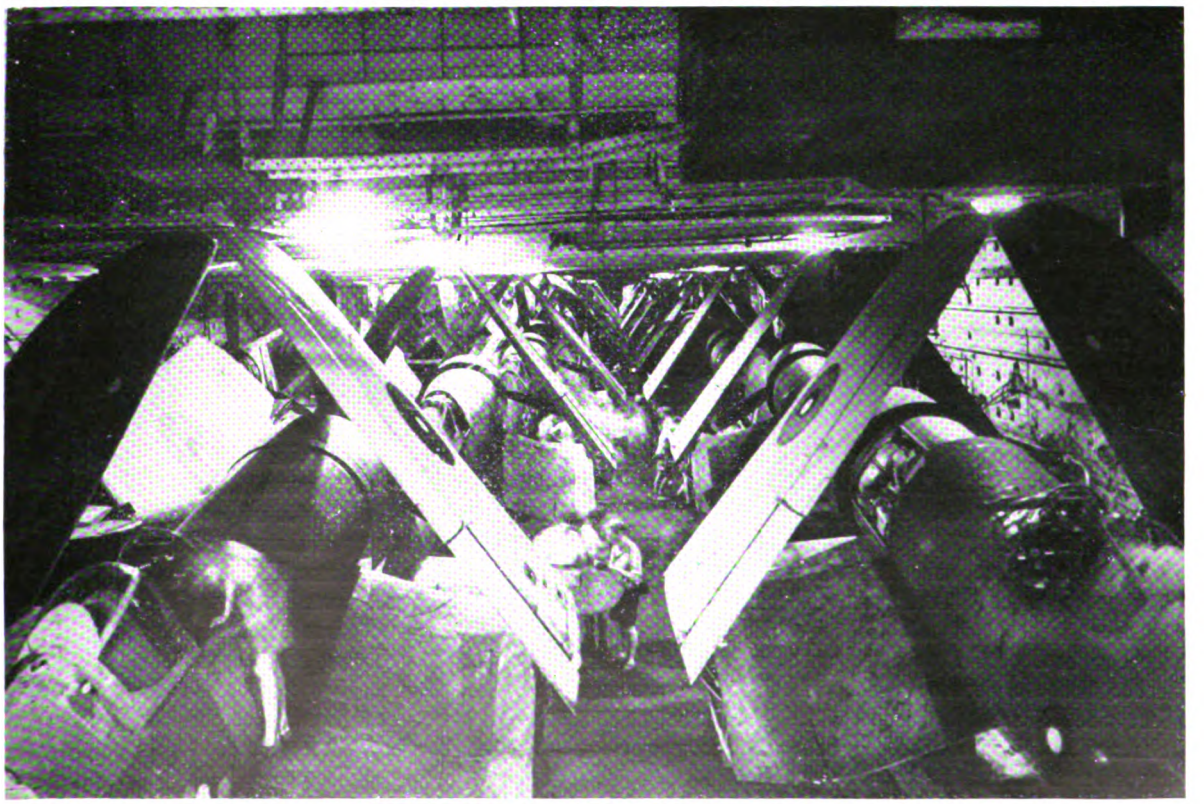

COMBINED SEA AIR OPERATIONS IN THE FAR EAST

Two pictures taken aboard warships operating in the Far East. Top, a pilot landing his Walrus safely on the deck of a carrier, and landing-crew hurrying forward to take charge. Bottom, Corsair aircraft packed closely in the hangar of the aircraft-carrier, H.M.S. *Illustrious*.

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AN AMERICAN FLEET IN THE PACIFIC

An impressive view of the U.S. Navy anchorage at Ulithi in the Caroline Islands. Riding at anchor are six Essex-type carriers; and to the left, behind an Independence-class carrier, is the *Lexington*. Ulithi Atoll, a small group of islands encircles an anchorage big enough for a whole fleet with its supply-train.

CHAPTER XIX

THE most astonishing feature of the later stages of the war against Japan was the acceleration of the Allied blows. When one considers the great distances involved and the enormous amount of material of all sorts which was required for each individual operation it seems well nigh incredible that so short a time should have elapsed between the securing the bases of Okinawa and Iwojima and the delivery of the first of the final series of attacks against the Japanese home islands.

The plans for the invasion and occupation of the Japanese main islands had already been laid and were fast coming to fruition. These plans envisaged two major invasion operations. One, which had been given the code name "Operation Olympic," was for the invasion of southern Kyushu, and the subsequent occupation of the whole of that island—the most southerly of the great islands which make up the Japanese homeland. The other, which had been given the code name of "Operation Coronet," involved an invasion of the Tokyo plain area, wherein lay most of the industrial strength of Japan.

Preparation for these two operations, both of which involved great amphibious tasks against strongly defended and fanatically held coasts, was a gigantic undertaking. Fleet Admiral Nimitz, of the American Navy, was responsible for the planning of both operations, and would have been responsible for their execution had it not been for the prior collapse of Japan in face of the atomic bomb. So closely were "Operation Olympic" and "Operation Coronet" integrated to the developing strategy of the war in the Pacific that the first steps in both these operations were taken within a few weeks of the reduction of Okinawa. These first steps were, of course, the preliminary bombardments designed to soften the defences and to reduce the scale of enemy opposition, particularly by air, which was likely to be encountered during the actual invasions.

The key island of Okinawa fell to the Allies in June, and by July 10th the first of the large-scale bombardments and air bombings by ships and aircraft of the United States Third Fleet was developing against the Japanese main islands. And with these blows by ships' guns and carrier-borne aircraft

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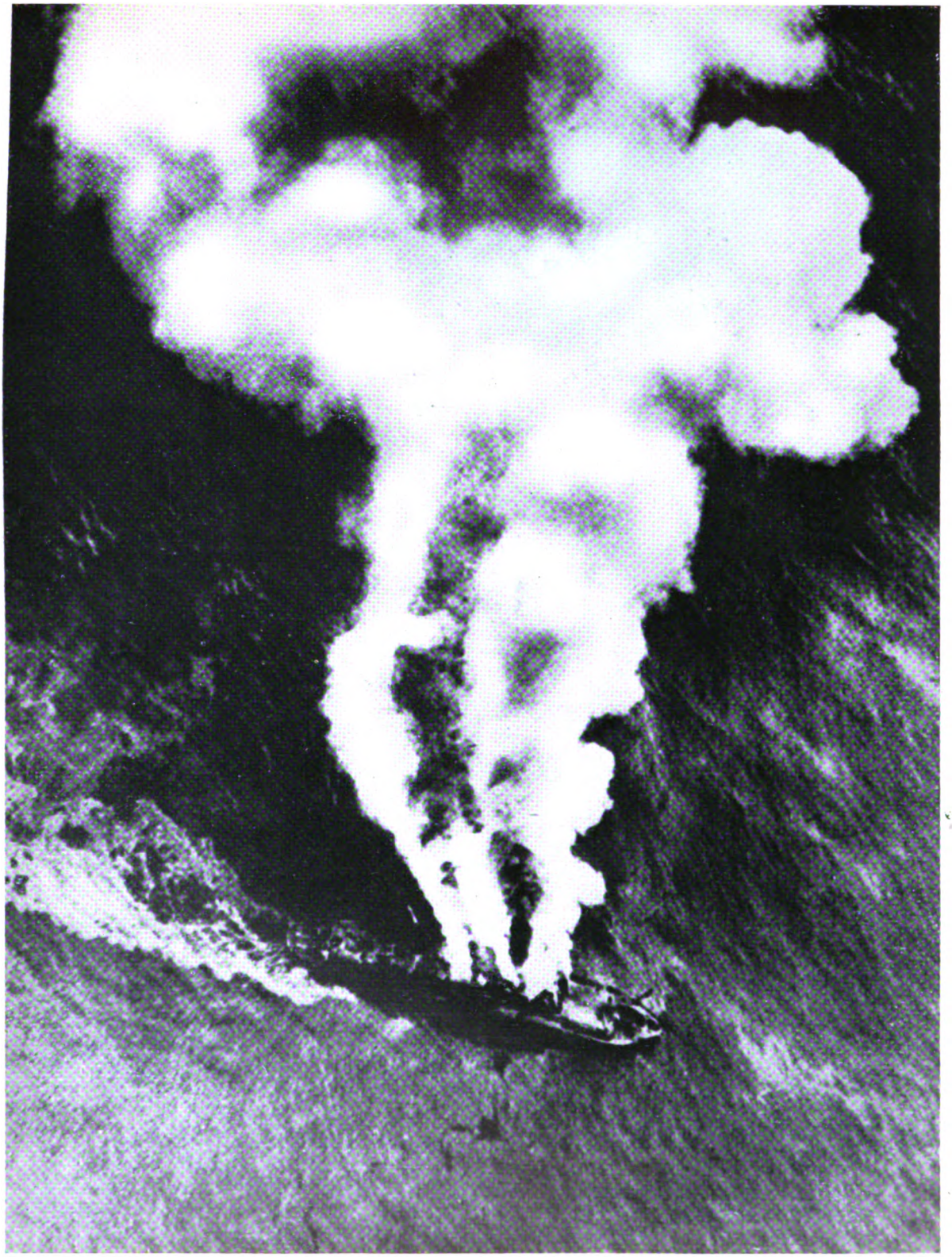

ENEMY VESSEL GOES UP IN SMOKE

A Japanese car-ferry reduced to a smoking ruin after being attacked by carrier-based aircraft. This ship, bombed in the Tsugaru Straits between Hokkaido and Honshu, was one of the many craft destroyed in an effective raid on enemy shipping.

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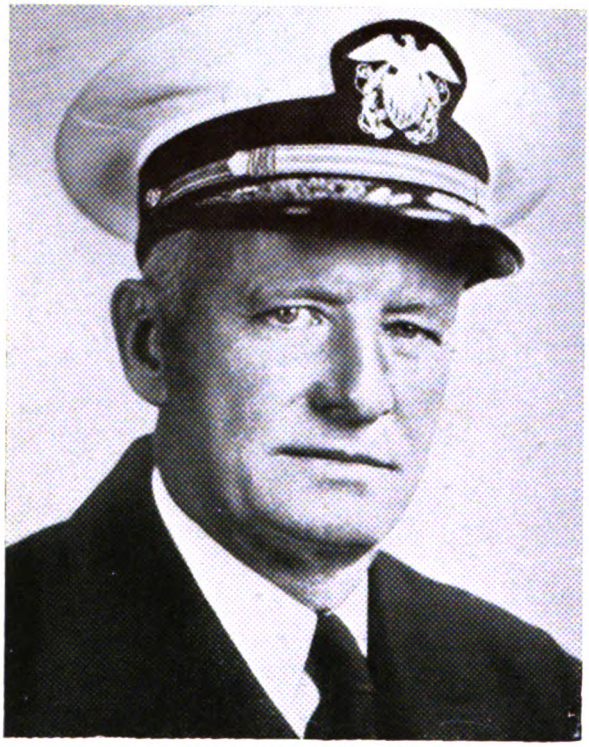

AMERICAN NAVAL CHIEF
Fleet Admiral Chester Nimitz, K.C.B., C.-in-C. U.S. Pacific Fleet.

there came greatly increased offensive action by the United States Army Strategic Air Force, which was then still operating from its bases in the Marianna Islands far to the south. These military air force strikes were very soon and progressively reinforced by the United States Tactical Air Force operating from the newly acquired airfields on Okinawa. Thus the scale of attack on Japan was stepped up in every possible way and with the least possible delay.

It was on July 10th that the great armada known as Admiral Halsey's Third Fleet reached a position off the Japanese coast from which its aircraft were to be flown off for their first strike. The area for flying off aircraft was approximately 170 miles south-east of Tokyo. In the words of Fleet Admiral Ernest King, the task of Admiral Halsey's great fleet of ships and aircraft was nothing less than "to complete the destruction of the Japanese main fleet, conduct a pre-invasion campaign of destruction against every industry and resource contributing to Japan's ability to wage war, and maintain maximum pressure on the Japanese in order to lower their will to fight."

It was in pursuit of these gigantic aims that aircraft took off from Admiral Halsey's aircraft-carriers 170 miles from Tokyo Bay on July 10th. Here was the beginning of a hard-hitting offensive in which no attempt was made by the American commander to conceal his objective or to hide the area in which his fleet was operating. This was certainly a risk, for the Japanese still had a considerable number of submarines at their disposal, and there was also some risk of attack on the fleet by Japanese shore-based bombing aircraft.

In the event, however, the risk proved to be fully justified. Very little enemy opposition was encountered and a scale of attack was made possible which would have been out of the question had concealment been considered necessary. On that first day of the new offensive 72 Japanese aircraft were destroyed on the ground and extensive damage was done to other targets. It was a good beginning, but far better results were to follow.

Immediately after the initial blow against the Tokyo area Admiral Halsey moved his fleet to the northward. Thus on July 14th and 15th he attacked northern Honshu and the eastern coast of Hokkaido. The enemy reaction to this attack was again ineffective.

From the Allied point of view this attack on the northern airfields of Japan was of great importance because it was in these northern and less accessible areas that the Japanese were training the pilots for their Kamikaze suicide bombers. It therefore struck at the source of the only effective reply that the Japanese had been able to make to the operations of the Allied fleets for some months.

The initial strikes against the Japanese airfields in northern Honshu and Hokkaido were in fact concerned not only with removing this menace but with reducing the Japanese power of resistance in a part of the Japanese main island which had not hitherto been subject to Allied attack.

Much of the Japanese internal economy was bound up in the factories bordering the north eastern coast of Honshu and the training grounds of Hokkaido, and the defence organisation of Japan depended entirely upon these northern territories, since the Japanese general staff had concentrated most of the training of the armed forces in these northern territories because they considered them less vulnerable to Allied attack than the southern part of the Japanese homeland.

Admiral Halsey's attack on July 15th was concerned not only with Japanese installations in Hokkaido and Northern Honshu but also with the essential communication between these two large

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U.S. CRUISER DAMAGED

The U.S.S. *Nashville*, the 10,000-ton cruiser which was damaged on December, 13th 1944, while convoying U.S. invasion forces to Mindovo. Explosions and fire from a Japanese suicide plane killed 133 officers and men.

AS THE OIL IS PUMPED TO AN AMERICAN CRUISER

Another sidelight of fuelling operations at sea—their heavy work over for the moment, seamen aboard the cruiser *Minneapolis* stand by the fuel hose coupling on the well deck, waiting for the signal that actual pumping has commenced. A drain pan below the coupling keeps the deck clean from any leaks.

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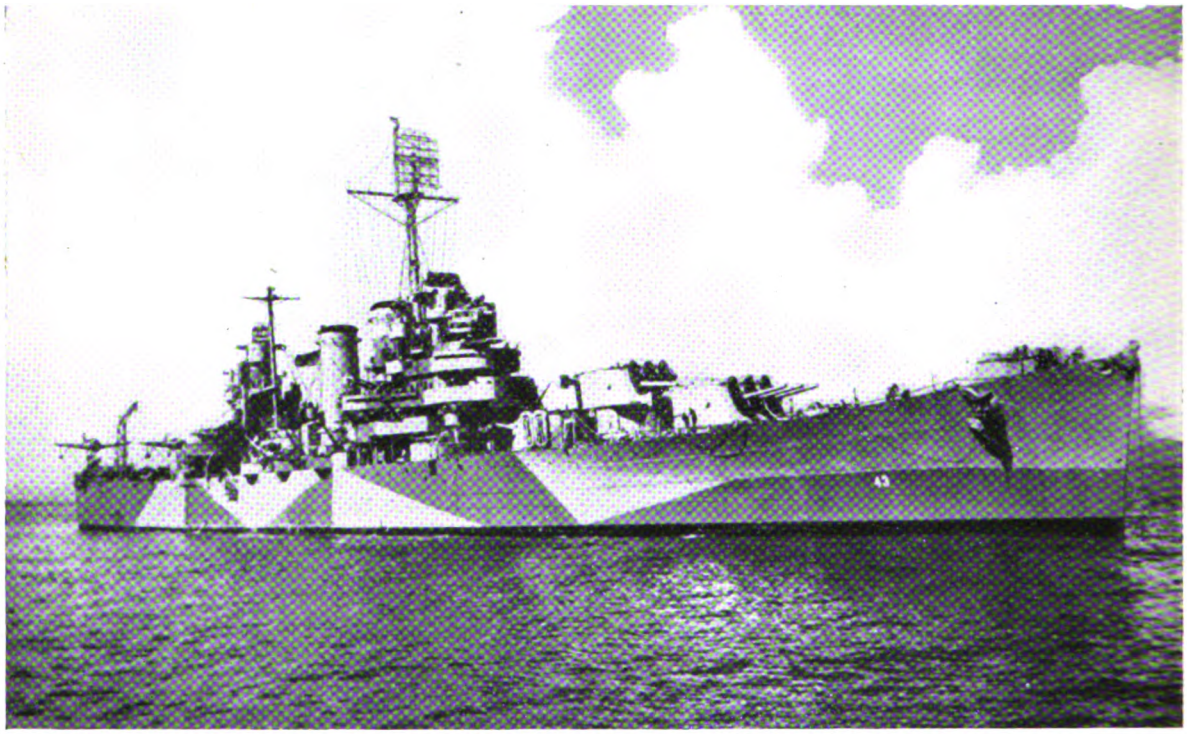

U.S. CRUISER *INDIANAPOLIS*

Just before the announcement of the Japanese surrender, the U.S. Navy department revealed the loss of the cruiser *Indianapolis* while carrying atomic bomb material from San Francisco to Guam. Every man aboard was lost.

islands. Here his carrier-borne aircraft scored a notable success which must have had a considerable effect upon the internal economy at a time when this was already stretched to the utmost. Between Hokkaido and Honshu there was a railway ferry which carried most of the traffic between these two island provinces of the Japanese Empire. The American carrier-borne aircraft sank five railway ferries and damaged four others. By so doing they virtually paralysed the communications in a large part of Northern Japan. At the same time Admiral Halsey's battleships went close inshore and bombarded with heavy shell the steel mills and industrial installations at Kamaishi and Muroran.

July 17th was a notable date in the history of the final stage of the war against Japan. On this date Admiral Halsey's Third Fleet, moving south from the latitude of Hokkaido, made junction with a strong task force of the British Pacific Fleet under the command of Vice-Admiral Sir Bernard Rawlings. That was a moment pregnant in history. From that moment until the final unconditional surrender in Tokyo Bay the British and American Fleets were never separated.

The junction of the two fleets was celebrated by a combined assault of tremendous weight against the tottering Japanese war potential. On the first day after the junction of the two fleets the ships of both navies bombarded the Japanese homeland in the Tokyo area. The intensity of this bombardment can be gauged from the fact that the battleships alone fired more than 2,000 tons of shells. This tremendous bombardment was carried out without any effective opposition by the Japanese air force—tribute to the efficacy of the former strikes against the Japanese airfields, which had fulfilled their object of neutralising Japanese air opposition.

The operations of the next few days were characterised by some of the most daring operations ever carried out by naval aircraft. A number of striking forces were flown off from British and American aircraft-carriers to attack and destroy the remnants of the Japanese fleet in the Inland Sea and in the naval bases of Kure and Yokosuka. During these attacks the *Nagato*—one of the only two remaining Japanese battleships —was damaged, and many other vessels were hit. The damage caused to the ships was greatly aggravated by the destruction of repair facilities in the dockyards, which might otherwise have been able to make good their defects.

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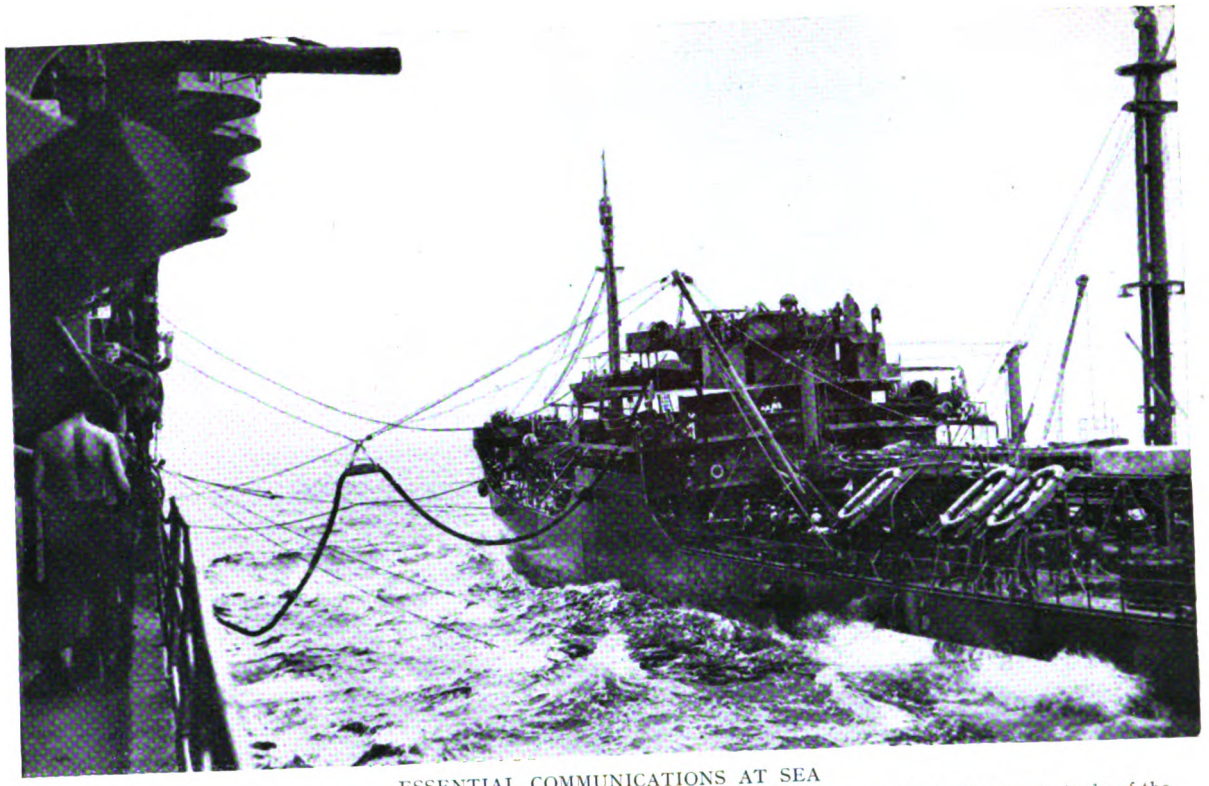
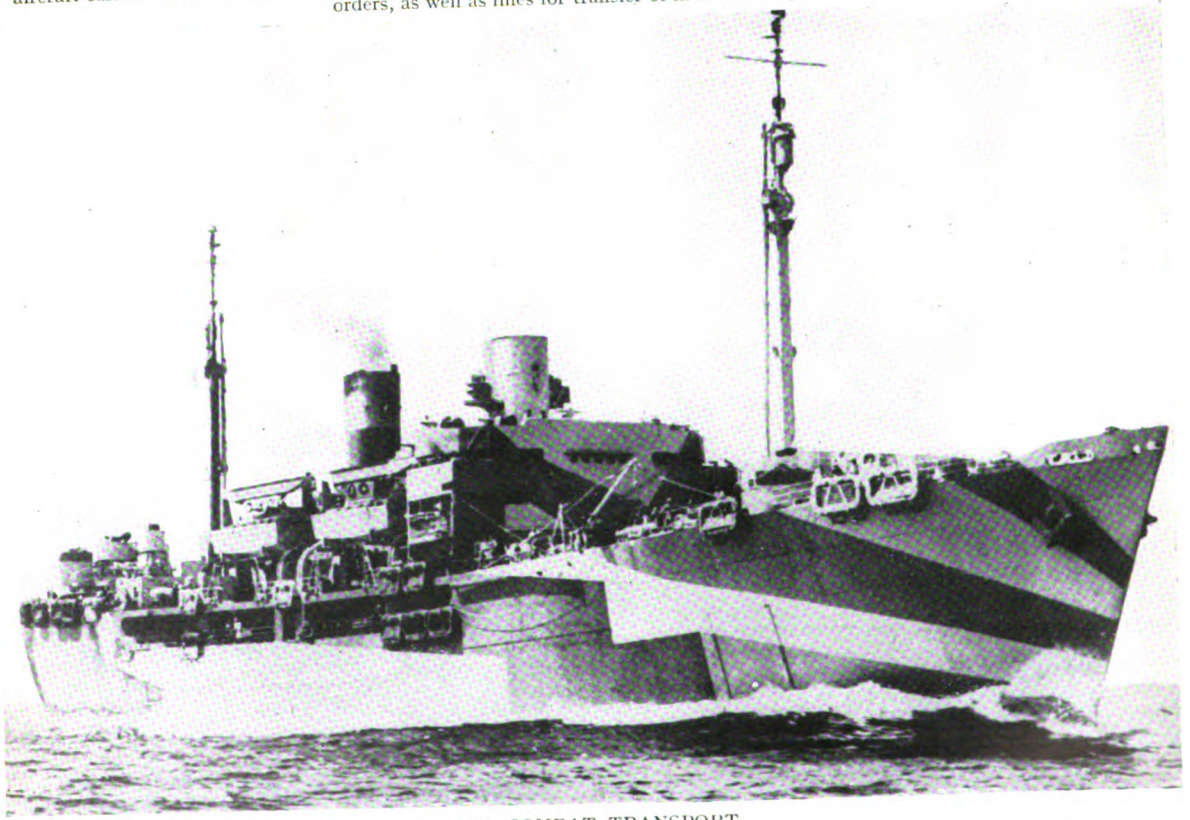


ESSENTIAL COMMUNICATIONS AT SEA

The hose in its saddle rides high out of the water as the tanker *Honsatonic* (right) pumps oil into the empty tanks of the aircraft-carrier U.S.S. *Ranger*. Among the many lines connecting the ships are telephone wires for quick exchange of orders, as well as lines for transfer of mail and cargo.



U.S. COMBAT TRANSPORT

A U.S. Navy BDI combat transport on its test run off the Pacific coast. Designed to carry fighting forces and their supplies to the scene of amphibious operations, it is a complete fighting unit in itself.

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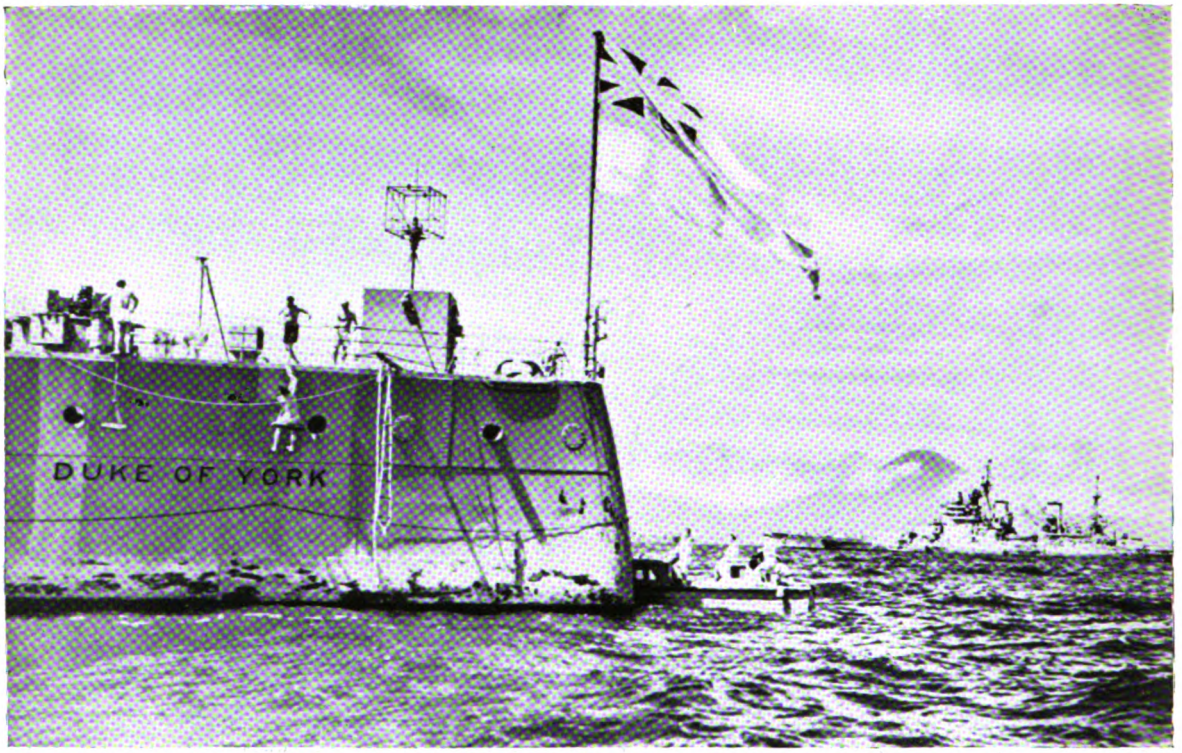

WHITE ENSIGN FLIES IN A JAPANESE HARBOUR

The White Ensign flying on H.M.S. *Duke of York* as the great battleship rides at anchor in Sagami Bay. Mount Fuji can be seen in the background.

July 24th and 25th were notable days, for the combined British and American strikes by carrier-borne aircraft either destroyed or put out of action a total of 22 Japanese naval units totalling 258,000 tons. It was, as Fleet Admiral King said, "the death knell of Japanese sea power." This notable success was not easily achieved. It was clear that the Japanese were making desperate efforts to save from destruction such warships as remained to them and which might help to defend their coasts in the invasion which they now knew to be imminent. Not only did the Japanese greet the British and American naval fliers with most intense anti-aircraft fire, but, for the first time since the attacks on the Japanese homeland began, they mounted aggressive airborne opposition on a considerable scale. Yet the Allied pilots achieved their aim, and in so doing contributed also to the great attrition being suffered by the Japanese air force. A total of 113 Japanese aircraft were destroyed in the course of the two-day attack, while only 12 British and American planes were lost.

So the hammering of Japan went on. At the end of the month Admiral Halsey's Third Fleet had again moved north-east, and on July 30th the aircraft from his carriers were harassing the Tokyo area for the third time in three weeks, while the guns of the fast battleships wrought havoc in the port and industrial quarters of Hamamatsu, on the east coast of Honshu.

There followed eight days of respite for the Japanese. This was not caused by Japanese interference or by inability on the part of the Allied Fleet to keep up the scale of attack, but to the weather. For those eight days the ships of the combined fleet were riding out a severe typhoon which made operations out of the question. As soon as the typhoon passed on, however, the British and American ships and aircraft returned to the attack, this time against northern Honshu, for it was known that the enemy had withdrawn most of the remnants of his air force to that area for pre invasion re grouping. Strikes by carrier-borne aircraft were therefore designed to catch and destroy as many of the Japanese aircraft as possible on their airfields. The plan was successful. In two days of such attacks 397 enemy aircraft were destroyed and 320 others damaged. This was a rate of loss which no air force could hope to survive.

While these terrific attacks were being delivered against the Japanese airfields on Honshu, other strikes were being carried out against shipping along the Honshu coast. This was more than a diversion,

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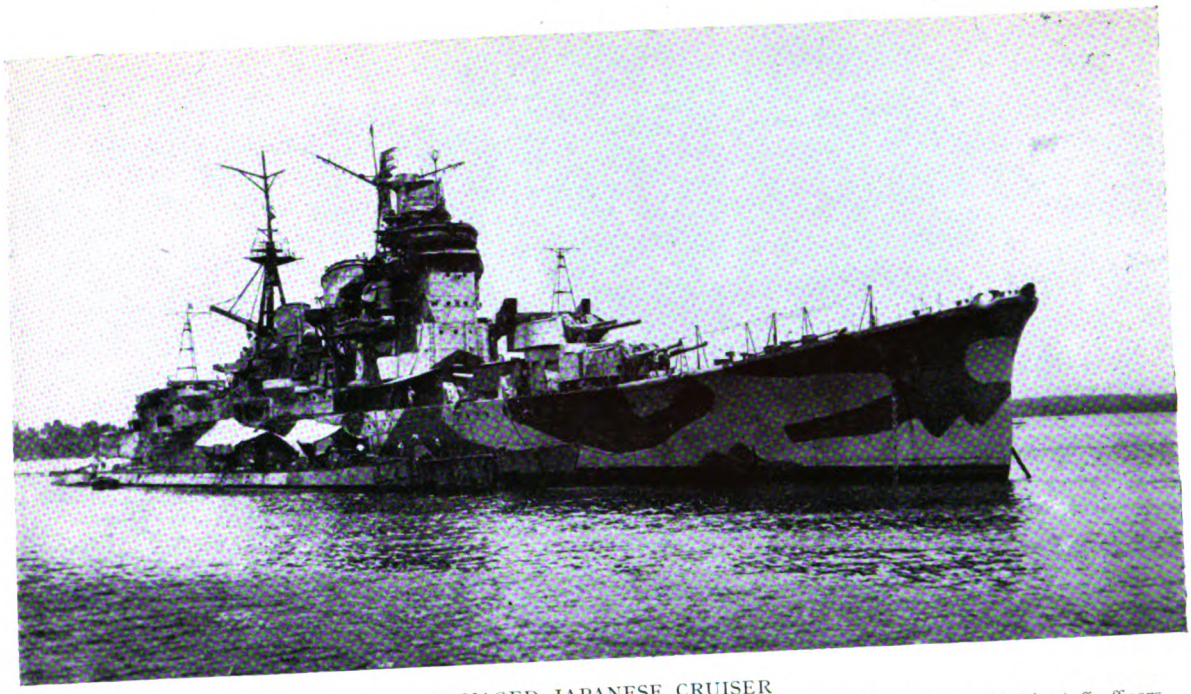
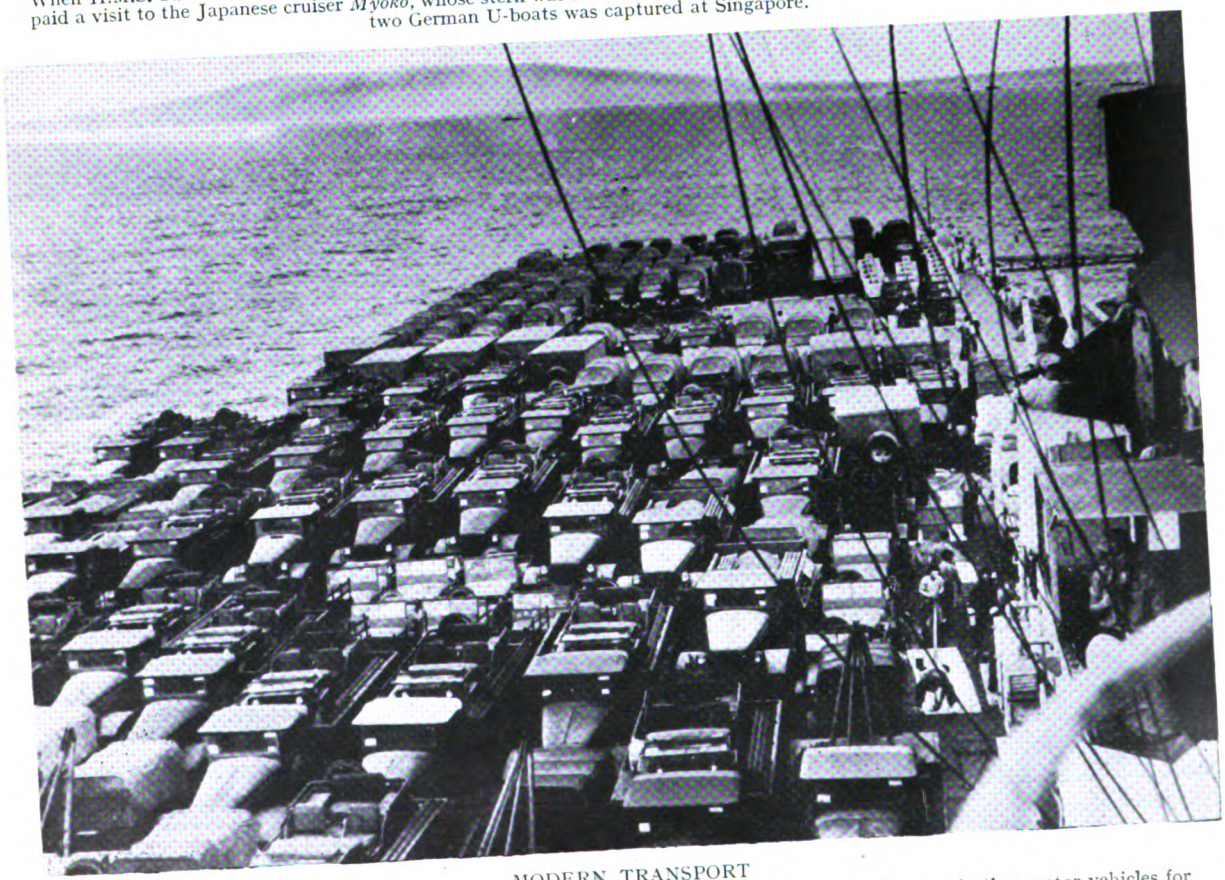


DAMAGED JAPANESE CRUISER

When H.M.S. *Saumarez* of the 26th Destroyer Flotilla entered Singapore Naval Base, Captain Power with his staff officers paid a visit to the Japanese cruiser *Myoko*, whose stern was blown off during the battle of the Philippines. The *Myoko* with two German U-boats was captured at Singapore.



MODERN TRANSPORT

The flight-deck of a U.S. aircraft-carrier almost completely covered with marine trucks jeeps and other motor vehicles for use at one of the American bases in the Pacific.

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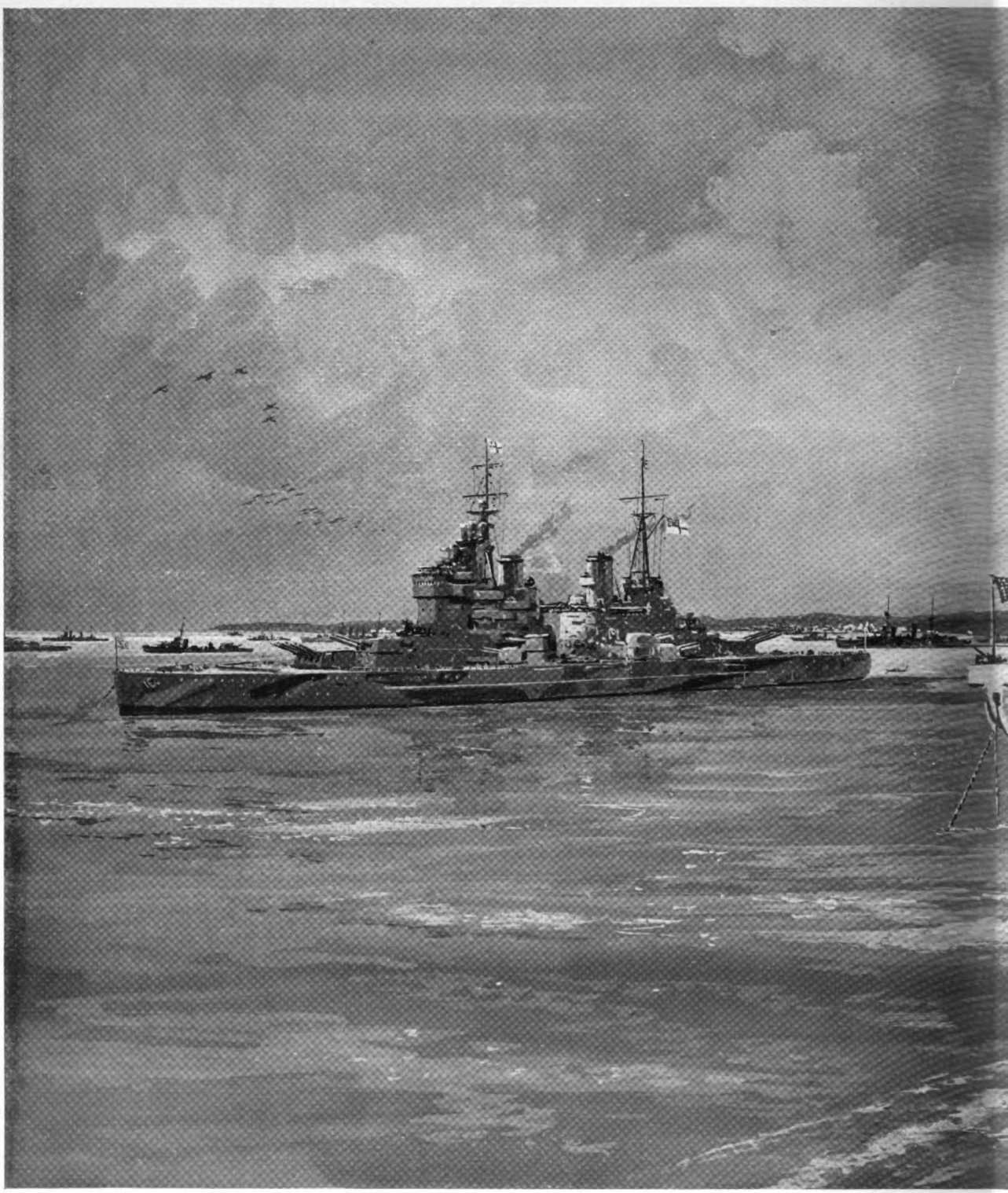

Specially drawn

THE END—THE SCENE OF

On September 2nd, 1945, the war in the Far East officially came to an end. On the deck of the mighty U.S. battleship *Missouri*, during a ceremony that lasted under half an hour, the Japanese delegates signed the documents of unconditional surrender in the presence of fifty Allied generals, admirals, and other senior officers. Shigemitsu, Japan's new Foreign Minister, and General Umezu, signed for the enemy, and the other ten signatories were General MacArthur (as Supreme Allied Commander), Admiral Chester Nimitz (for the U.S.), Admiral Sir Bruce Fraser (for Britain), General Hsu Yung-Chang (for China), Lieut.-General Deevyenko (for

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by MONTAGUE B. BLACK, F.R.S.A.

SURRENDER IN TOKYO BAY

Russia), General Sir Thomas Blamey (for Australia), Air Vice-Marshal L. M. Isitt (for New Zealand), Colonel Moore Cosgrave (for Canada), General le Clerc (for France), and Vice-Admiral C. F. L. Helfrich (for the Netherlands). It was a proud day for the Allies, and a fitting end to Japan's evil plans for world domination, that were laid many years ago but were first openly revealed by her treacherous attack on Pearl Harbour on December 7th, 1941. In this drawing our special artist, Montague B. Black, F.R.S.A., gives an impression of the surrender scene in Tokyo Bay—the culminating triumph of the Allies in the second World War.

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for it must be remembered that the invasion operations were planned to take place in the very near future and the pre-invasion plan was to destroy anything and everything which could offer opposition to the Allied invasion.

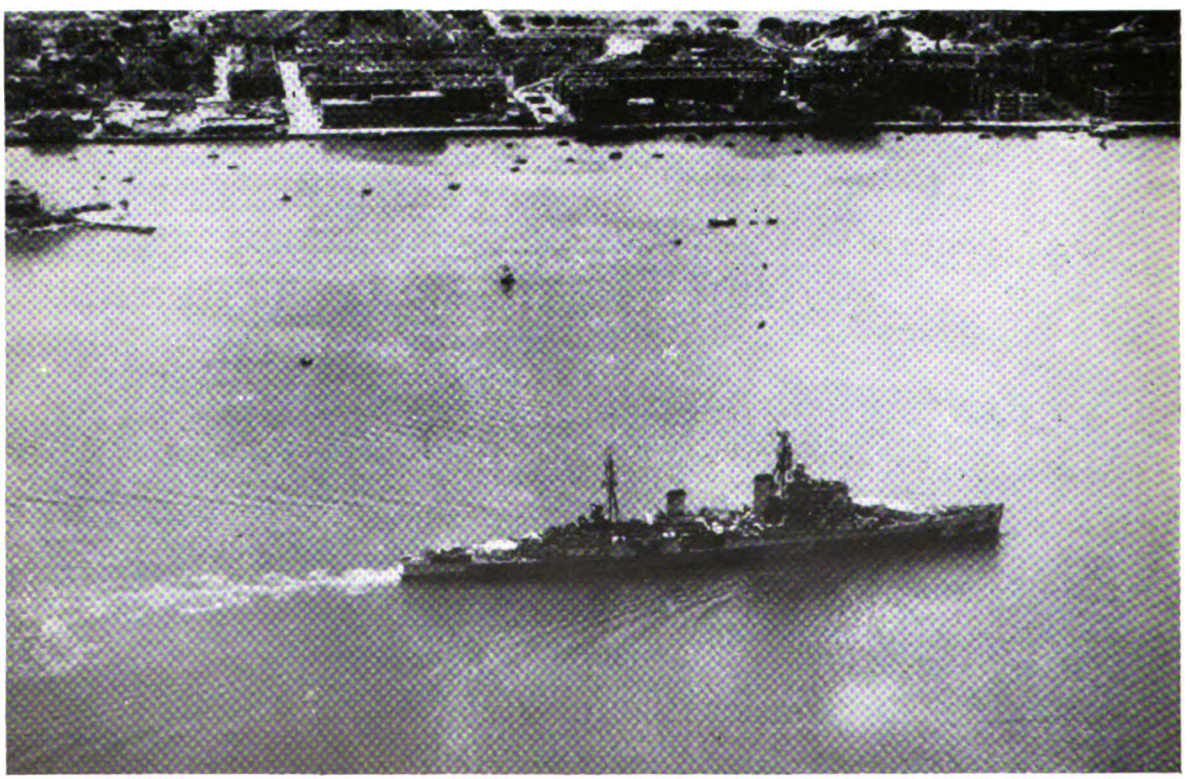
It was in one of these strikes against shipping on August 9th that Lieutenant Robert Hampton Gray, D.S.C., of the Royal Canadian Naval Volunteer Reserve, won the Victoria Cross but lost his life. Lieutenant Gray took off from the aircraft-carrier H.M.S. *Formidable* to lead an attack on Japanese shipping in the bay of Onagawa Wan on the Honshu coast.

In the bay the aircraft found a small fleet of five warships, mostly destroyers or sloops, as well as many other ships. Lieutenant Gray at once led his squadron in a dive to the attack although a most furious fire was opened on the aircraft by Japanese shore batteries and by the ships.

Lieutenant Gray selected for his target a Japanese destroyer. He swept in to the attack, oblivious of the concentrated fire, and made straight for his intended victim. His aircraft was hit again and again, but he kept on. As he came close to the destroyer his aircraft caught fire, but he pressed on to within 50 feet of the Japanese ship and then let go his bombs. He scored at least one direct hit—probably more. The destroyer was seen to sink almost immediately, but Lieutenant Gray did not return. He must have been killed just as he released his bombs at the end of his fearless run in to attack. In recommending Lieutenant Gray for the posthumous award of the Victoria Cross Vice-Admiral Sir Philip Vian wrote: "I have in mind firstly his brilliant fighting spirit and inspired leadership, an unforgettable example of selfless and sustained devotion to duty without regard to safety of life and limb."

It was on that same day, August 9th, that the second atom bomb fell on the great port and ship-building centre of Nagasaki. The first of these terrible weapons had been dropped on Hiroshima three days before.

The appearance of the atom bombs did not lead to an immediate surrender by the Japanese. In fact the naval aircraft from the carriers of Admiral Halsey's Third Fleet continued without intermission



LIBERATION OF HONG-KONG

Flying the flag of Rear-Admiral H. S. Harcourt, C.B., C.B.E., R.N., the cruiser *Swiftsure* steams into Victoria Harbour leading other units of the British Naval Force that reclaimed the crown colony from the Japanese on August 30th.

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DAMAGED JAPANESE CRUISER

Captain M. R. Power, who commanded the 26th Destroyer Flotilla, which sank the Japanese cruiser *Haguro*, paid a visit to her sister ship, the *Myoko* at Singapore. The *Myoko* had her stern blown off during the battle of the Philippines. Picture shows: Leaving the *Myoko* via the conning tower of a German U-boat with Japanese sailors lined up on the deck

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to hammer at the sources of Japan's rapidly fading strength, while the battleships carried out further bombardments of Japanese ports. It was not, in fact, until August 13th that Admiral Halsey delivered his final blow against Tokyo, and on that day Japanese aircraft made desperate attempts to break through to attack the ships. This they failed to do owing to the strength of the protective screens, and they lost 21 aircraft in their futile attempt. Even on August 15th—the day of the Japanese surrender, the order to "cease fire" was not received from Fleet Admiral Nimitz, the Supreme Allied Commander in the Pacific, until it was too late to stop the first of the day's air strikes planned against Tokyo. This strike shot down 30 Japanese aircraft in combat and destroyed 10 more on the ground. The second strike of the day had also taken off from the carriers, but it was recalled in time; its pilots being ordered to jettison their bombs and return to their carriers.

Thus Japan was beaten, and beaten without the necessity of large-scale invasions, which must by their nature have been expensive in human life. It is popularly believed that the two atom bombs were alone responsible for the collapse of Japan. When one considers the fanaticism of the Japanese and the cheapness in which they hold human life one is forced to conclude that the atom bombs should properly be regarded as the final blows in a vast attrition to which Japan had been subjected and which had so whittled away her fighting power as to make it impossible for her to withstand further blows. Consider her position at the beginning of August. She had no navy left worthy of the name. Her air force had been reduced to impotence. Her war industries were crumbling ruins. The Allies held undisputed command of the seas right up to her coasts and could bomb or bombard at will. Many of her conquests had gone, and she had no communication with those that remained to her. Most of her vast army was marooned overseas.

Moreover, the attrition was being stepped up all the time. Since July 10th the British and American

JAPANESE EVACUATION OF SINGAPORE

The Royal Navy made sure that no loot was taken away by Japanese sailors when they evacuated Singapore. All luggage was minutely examined before they embarked. The above shows the commanding officer of H.M.S. *Vigilant* supervising the opening of suspect cases.

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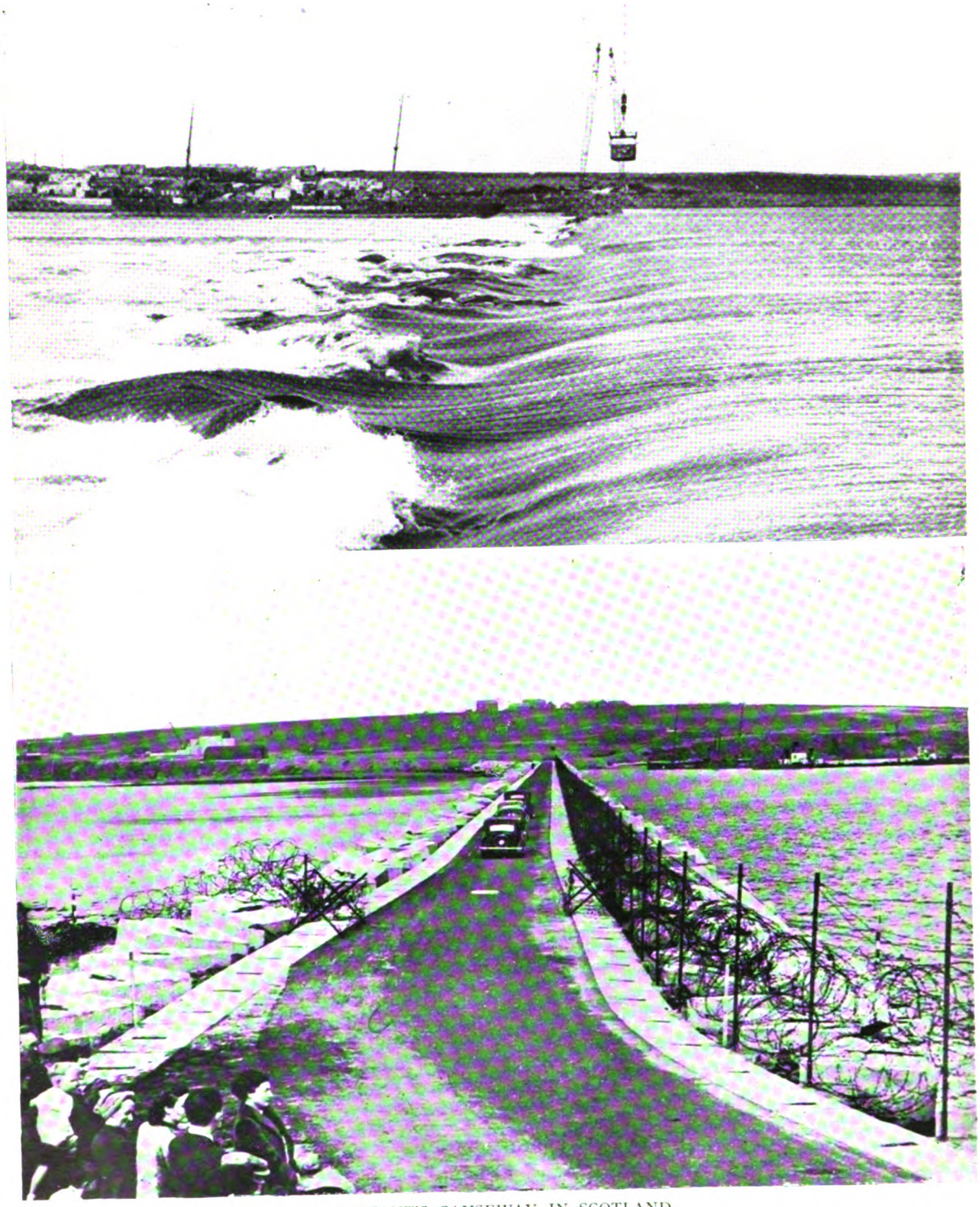

A GIANT'S CAUSEWAY IN SCOTLAND

To seal the entrance to Scapa Flow a long causeway has been built, joining the four islands of Lamb Holm, Glips Holm, Burray, and South Ronaldshay to the Orkney mainland. Begun in 1940 and finished in 1945, it now has a peaceful function, carrying supplies from Kirkwall within an hour for islanders who previously were cut off from the mainland in bad weather. Its construction was another wartime triumph for British engineers, built as it is across the tidal race between the islands, and providing not only protection for the British Fleet in Scapa Flow but also an anchorage previously impossible. The top picture shows the tidal race through one of the Sounds over which the causeway was built. The lower picture shows a road over the causeway.

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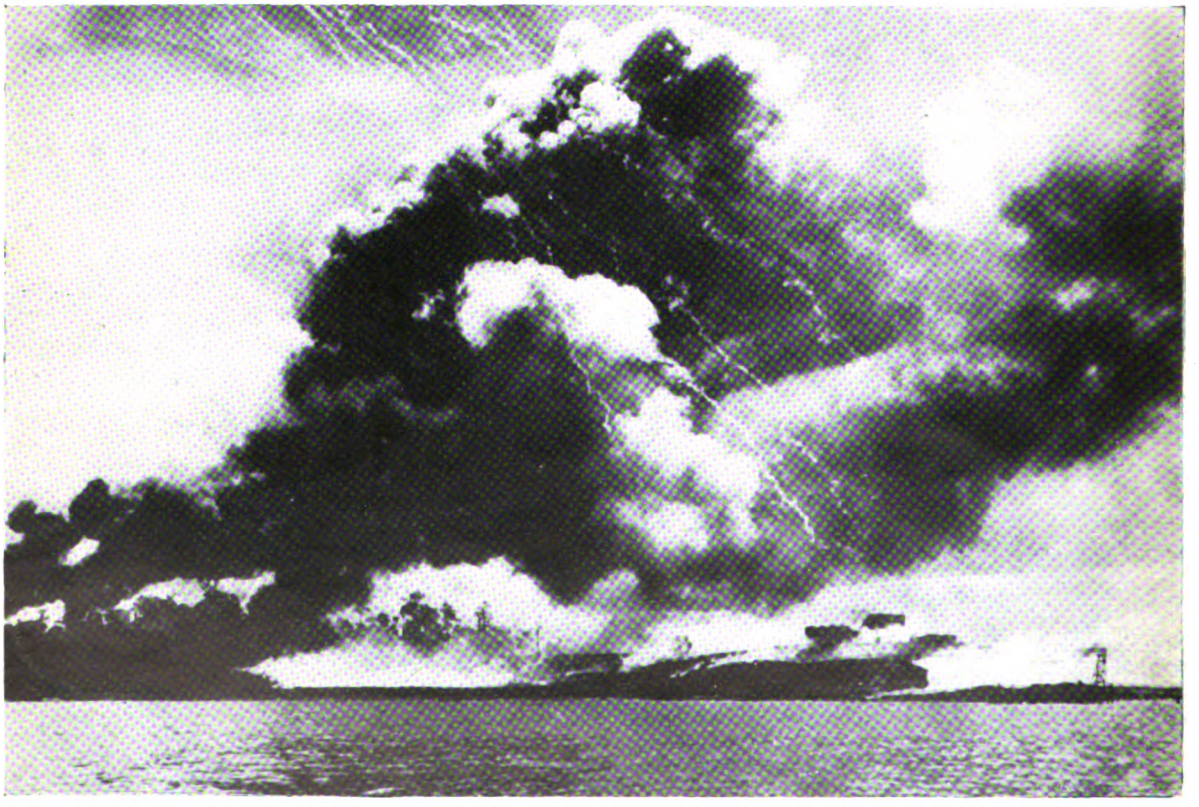
forces operating as Admiral Halsey's Third Fleet had destroyed or damaged 2,804 enemy aircraft, sunk or damaged 148 Japanese warships and 1,598 merchant vessels, destroyed 195 railway locomotives and damaged a further 109, in addition to inflicting heavy damage on industrial targets. No nation could hope to withstand such a strain. A maritime island nation was paying the price for having lost command of the sea.

There followed the surrender negotiations at Manila, and then, on August 29th, Fleet Admiral Nimitz arrived and hoisted his flag in the battleship *South Dakota*, while the battleship *Missouri*, Admiral Halsey's flagship, entered Tokyo Bay and anchored off the Yokosuka naval base. In company with the *Missouri* was H.M.S. *Duke of York*, flying the flag of Admiral Sir Bruce Fraser, Commander-in-Chief of the British Pacific Fleet. Other units of the Third Fleet, with H.M.S. *King George V* and other British and Dominion ships, followed the flagships into Tokyo Bay. The formal surrender of Japan was signed on board the battleship *Missouri* in Tokyo Bay at eight minutes past nine o'clock on the forenoon of September 2nd, 1945, Admiral Sir Bruce Fraser signing on behalf of Great Britain.

The long war, which had lasted one day short of six years, was over, but there remained an immense amount of work for the navies to carry out in the Pacific. Hong-Kong was liberated on August 30th, the surrender being taken by Rear-Admiral Cecil Harcourt in H.M.S. *Swiftsure*. Singapore was surrendered on September 5th to Admiral Lord Louis Mountbatten, the Supreme Allied Commander in that theatre of war.

Farther west, a large-scale landing on the coast of Malaya between Port Swettenham and Port Dickson had been planned, and this was carried out on September 9th to ensure the effectiveness of the surrender in Malaya and hasten such mopping up operations as might prove necessary.

In Siam, French Indo-China, and in the Netherlands East Indies the surrender of the Japanese armed forces was not peacefully carried through, and much heavy responsibility had to be shouldered by the commanders on the spot.



NAVAL BOMBARDMENT OF TARAKAN

Smoke billowing from burning Japanese installations on Tarakan during the four days bombardment of the island by units of the U.S. Fleet and Royal Australian Navy.

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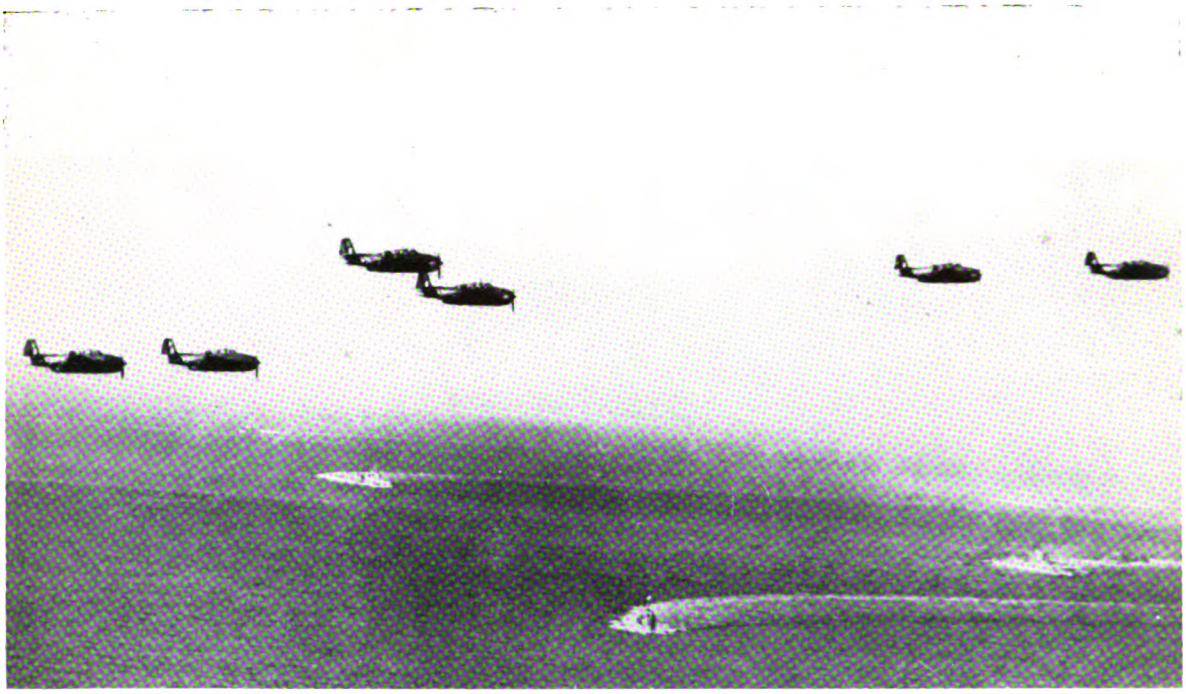
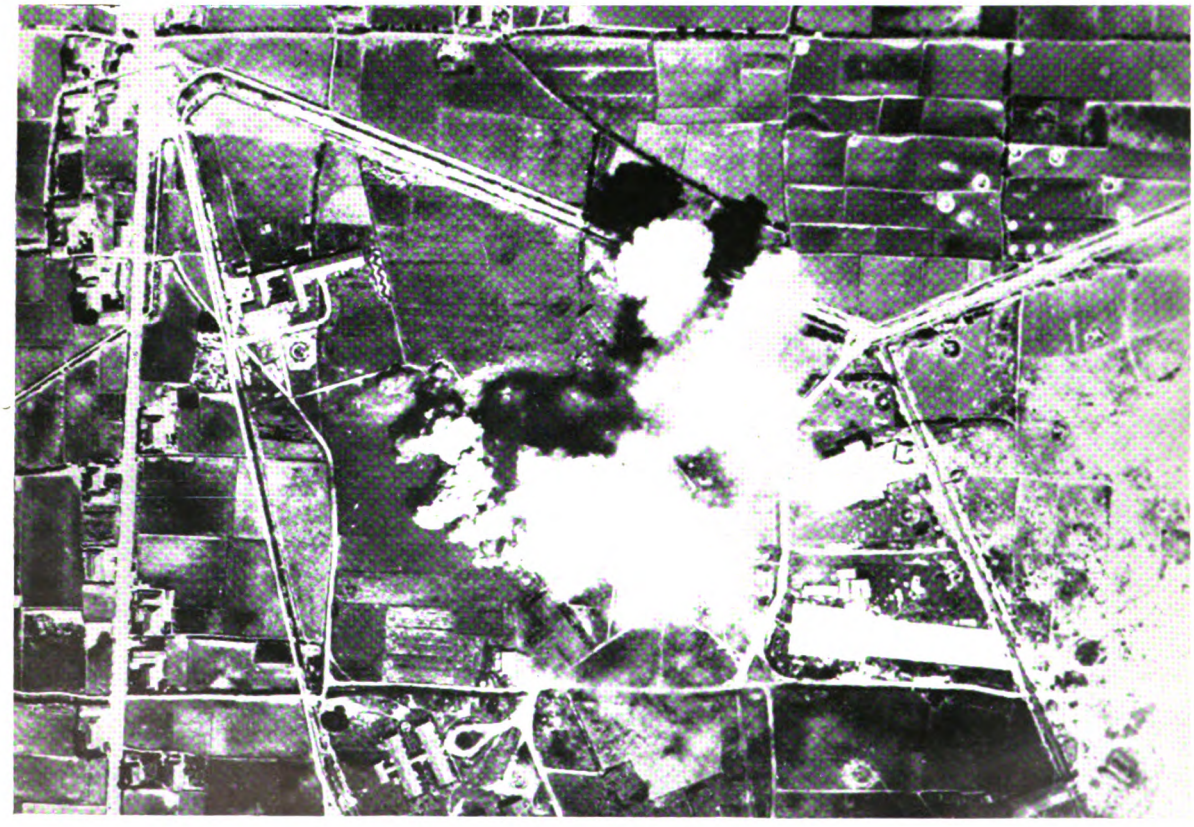


OFF ON A BOMBING MISSION

Carrier-borne Avengers of the British Pacific Fleet flying over H.M. ships while on their way to bomb Japanese targets—a picture taken from H.M. aircraft-carrier *Victorious*.



STRIKING AT THE JAPANESE HOMELAND

Takamatsu airfield, on Shikoku Island, being blasted with bombs dropped by naval aircraft from carriers of the British Pacific Fleet Task Force, operating with Admiral Halsey's U.S. 3rd Fleet in attacks on the Japanese Home islands.

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For the rest, there was the enormous task of collecting the very large numbers of Allied prisoners of war and internees and of repatriating them. In this work the personnel ships of the Fleet Train and the aircraft-carriers proved invaluable.

Let nobody imagine that the end of the war in the Far East has ended the work of either the British or American navies in that hemisphere. Their tasks will be heavy for many years to come.

EPILOGUE

WHEN the war came to an end with the unconditional surrender of Japan signed on board the U.S.S. *Missouri* in Tokyo Bay, Admiral Sir Andrew Cunningham, the First Sea Lord, sent the following message to Fleet Admiral Ernest J. King, Commander-in-Chief and Chief of Naval Operations, United States Fleet.

"On the occasion of the Japanese surrender I should like to offer my warmest congratulations to you and the American Navy on the tremendous achievements with which they have fought their way across the Pacific to the threshold of Japan and so to final victory.

"The determination and courage with which after Pearl Harbour command of the Pacific was regained will long be remembered in Naval history and it was with the greatest pride that we sent the British Pacific Fleet to operate under the wise and skilful leadership of Admiral Nimitz.

"We rejoice that in the hour of victory we were privileged to play our part alongside your powerful fleets off the coast of Japan.

"I earnestly hope that the warm friendship and close association with which our two navies have fought together in this war may continue undiminished in the years that lie ahead."

Fleet Admiral King replied with the following despatch :

"On this occasion our sincere appreciation goes to you and to the entire Royal Navy for your part in the mutual victory. Only the indispensable role played by your fleet in combating German and Italian naval power in the Atlantic and Mediterranean enabled America to direct her own strength against the Japanese in the early days of the war.

"A little more than a year ago the naval forces of the British Empire and those of the United States joined together in one of the greatest undertakings in the history of warfare. The Normandy invasion resulted, which led to the defeat of Germany, thus demonstrating what can be done by teamwork among collaborating nations.

"More recently, the British Pacific Fleet added materially to the strength of Allied offensives in Japanese waters.

"The war just ended has added many a bright page to the already glorious history of the Royal Navy.

"I share with confidence your hope for continued close and friendly association between our forces throughout the future."

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